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US Army Corps
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Construction Engineering
Research Laboratories

Environmental Compliance Assessment and Management System (ECAMP)

U.S. Air Force
German Supplement

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In response to the growing number of environmental laws and regulations worldwide, the U.S. Air Force has adopted an environmental compliance program that identifies compliance problems before they are cited as violations by the U.S. Environmental Protection Agency (USEPA).

Beginning in 1984, the U.S. Army Construction Engineering Research Laboratories (USACERL), in cooperation with the Air Force Engineering and Services Center, began research on the Environmental Compliance Assessment and Management Program (ECAMP). ECAMP integrates Federal regulations, Department of Defense (DoD) directives and instructions (including the *Overseas Environmental Baseline Guidance Document*), Air Force regulations, and documentation of good management practices and risk-management issues into a series of checklists that list legal requirements and specify items or operations to review. Each assessment protocol lists a point of contact to help assessors review the checklists as effectively as possible.

The ECAMP German Supplement incorporates German laws and regulations, and was developed for use in conjunction with the Worldwide ECAMP manual (USACERL SR-EC-93/09). This manual was tested at Rhein-Main and Spangdahlem Air Force Bases, and is updated continually to address changes in German laws and regulations.

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6. AUTHOR(S)
David A. Krooks and Donna J. Schell

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
U.S. Army Construction Engineering Research Laboratories (USACERL)
P.O. Box 9005
Champaign, IL 61826-9005

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FOREWORD

This work was performed for Headquarters United States Air Force (HQ USAF), Director of Engineering and Services, Environmental Division, under Project Order Number 89-17, *Environmental Compliance Assessment and Management Program (ECAMP)*, dated 21 August 1992. The HQ USAF technical monitors were CPT John Kolakowski, HQ USAF/CEVV, and Willie Ningelgen, HW USAF/CEPV.

The research was performed by the Environmental Compliance Modeling and Systems Division (EC) of the Environmental Sustainment Laboratory (EL), U.S. Army Construction Engineering Research Laboratories (USACERL). The Principal Investigator was Dr. David Krooks, CECER-ECP. Donna J. Schell, CECER-ECP, was Associate Investigator. Dr. Diane K. Mann, CECER-ECP, is Acting Team Leader. Dr. John T. Bandy is Acting Chief, CECER-EC, and William D. Goran is Chief, CECER-EL.

LTC David J. Rehbein is Commander of USACERL and Dr. L. R. Shaffer is Director.

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NOTICE

This manual is intended as general guidance for personnel at certain U.S. Air Force installations. It is not, nor is it intended to be, a complete treatise on environmental laws and regulations. Neither the U.S. Government nor any agency thereof, nor any of their employees, makes any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information contained herein. For any specific questions about, or interpretations of, the legal references herein, consult appropriate legal counsel.

INTRODUCTION

Neither the Federal Republic of Germany nor the states of which it is composed has one single comprehensive or general environmental code that covers all areas of environmental concern. Rather, the legislative technique treats environmental problems most often in the context of a certain subject of law. This means that specific laws relate in general to subjects and not to problems. Older laws seldom focus exclusively on the environment; rather, they might include only one or two provisions relevant to it. Newer laws, such as the *Federal Immission* Control Act*, in contrast, may be concerned with environmental issues only.

It should be noted that there is in German law a clear distinction between private (civil) law and public (administrative) law. Environmental law is predominantly administrative law. Actions in private law, however, may be successful notwithstanding the legality of a certain facility under administrative law, although the extent of affected private rights is determined in individual cases by the valid licensing under administrative law.

Environmental law originates mainly from statutory law. Customary law based on established rights developed by longstanding use, and general acceptance by the people involved, is relatively unimportant.

The most important sources of environmental legislation are the laws passed as a result of formal Federal and state parliamentary procedures. The Federal government has assumed a dominant role in the area of environmental law (just as in other areas of law), and it is frequently left to the state governments to regulate administrative, procedural, and other matters of lesser importance. The Federal and state governments and individual ministers issue ordinances (Rechtsverordnungen) that implement laws; for example, at the time of this writing the Federal government has issued some twenty-one ordinances that implement various portions of the *Federal Immission* Control Act*. Before such ordinances can be issued, authorization by law is required in which the content, purpose, and extent of the authorization is formally and legally specified.

Administrative decrees and regulations issued by authorities for internal use, in particular for instructing subordinate departments, are important in general administration.

Also important for environmental protection are by-laws or statutes established by public bodies such as towns and counties for their own legislative purposes. Such by-laws might be concerned with zoning, waste disposal, or drainage, for example.

*This is the correct spelling as used in the English translation of the German source document (see Section 1, *Air Emissions Management*, Definitions).

It is characteristic of German environmental law that the laws themselves rarely contain directly applicable standards. Instead, they often contain abstract verbal descriptions of the desired level of health and environmental protection, or give standards in such a general way that further specification is necessary. The implementation of environmental law, however, requires technical and scientific standards that specifically lay out what limitations are imposed on the individual and what amount of pollution is permissible. The nature of the actual standards varies.

Generally, the law itself authorizes the executive branch to enact ordinances that determine specific quantities. The ordinances enacted often cover only a portion of what is actually needed. In other instances, no ordinance is enacted at all. Thus, law and ordinances together may describe the standard to be complied with in such general terms as "not harmful to the environment" or "in accordance with the state of technology," or "in accordance with the state of science and technology." The purpose of this legislative technique is to allow environmental protection to keep pace with scientific and technological progress.

A number of administrative regulations specify actual standards which are intended to cover all aspects and all possible facilities and situations in a particular area of concern. In such instances, the standards that actually apply to any given facility are determined by the authorities on a case-by-case basis. In making such determinations, the authorities may seek out elaborate scientific and technical opinions of professional organizations of engineers on the quantities and standards currently achievable and desirable, or they may base their determinations solely on the results of a case study. While these opinions cannot be legally enforced, they are extremely important.

This manual, based on German regulations, is current as of 1 April 1993.

Section 1

Air Emissions Management

Section 1

AIR EMISSIONS MANAGEMENT

A. Applicability

In the course of carrying out its mission on German soil, any U.S. Air Force installation will engage in activities that may have an impact on air quality. Therefore, this protocol is applicable to all installations.

B. National Laws and Regulations

- The **Gesetz zum Schutz vor schaedlichen Umwelteinwirkungen durch Luftverunreinigungen, Geraeusche, Erschuetterungen und aehnliche Vorgaenge (Bundes-Immissionsschutzgesetz -- BImSchG)** (Act on Protection Against Harmful Effects on the Environment by Air Pollution, Noise, Vibrations, and Similar Phenomena (Federal Immission Control Act)) is the principal piece of enabling legislation relevant to Air Emissions Management. Though in itself it raises relatively few compliance issues, it does contain crucial definitions and lay the ground work for important distinctions relevant to Air Emissions Management. For example, it establishes a distinction between facilities that require permits and those that do not. The troops of foreign nations stationed on German soil are subject to all relevant provisions except those that have to do with machines, equipment, mobile technical equipment, and motor vehicles. However, deviations from the provisions of the Act in those areas may occur only if there is a compelling justification for them grounded in the special requirements of the forces' mission. The Act also mandates the appointment of an Incidents Officer and empowers the federal government to specify precisely which facilities must have one. No regulation implementing this provision of the Act has yet been discovered, however. A number of regulations that do implement the BImSchG have been written based on the broad provisions that it contains, and of these implementing ordinances a number are relevant to Air Emissions Management.

- The **Erste Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung ueber Kleinfeuerungsanlagen -- 2. BImSchV)** (First Regulation Implementing the Federal Immission Control Act (Regulation on Small Furnaces)) contains emission standards for furnaces the thermal output of which is less than 50 megawatts (MW). Such furnaces do not require a permit under BImSchG.

- The **Zweite Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung zur Emissionsbegrenzung von leichtfluechtigen Halogenkohlenwasserstoffen -- 2. BImSchV)** (Second Regulation Implementing the Federal Immission Control Act (Regulation Limiting Emissions of Highly Volatile Halogenated Hydrocarbons)) contains provisions relevant to the use of highly volatile halogenated hydrocarbons in surface treatment and dry-cleaning facilities.

- The **Dritte Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung ueber Schwefelgehalt von Leichtem Heizoel und Dieselkraft Stoff -- 3. BImSchV)** (Third Regulation Implementing the Federal Immission Control Act (Regulation on the Sulfur Content of Light Fuel Oil and Diesel Fuel)) sets a limit on the amount of sulfur that may be contained in light fuel oil and diesel fuel that are used on the installation.

- The **Vierte Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung ueber genehmigungsbeduerftige Anlagen -- 4. BImSchV)** (Fourth Regulation Implementing the Federal Immission Control Act (Regulation on Facilities that Require A Permit)) lists all those facilities that must have a permit granted under the provisions of the BImSchG.

- The **Fuenfte Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung ueber Immissionsschutzbeauftragte -- 5. BImSchV)** (Fifth Regulation Implementing the Federal Immission Control Act (Regulation on Immissions Control Officers)) lists those facilities that are required by law to appoint Immissions Control Officers and enables the competent authority to require such an appointment even if it is not mandated in the law.

- The **Sechste Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung ueber die Fachkunde und Zuverlaessigkeit der Immissionsschutzbeauftragten -- 6. BImSchV)** (Sixth Regulation Implementing the Federal Immission Control Act (Regulation on the Technical Expertise and Dependability of Immissions Control Officers)) lists educational requirements for persons who are to be appointed Immissions Control Officers. It also includes requirements that must be met by those persons in the area of practical experience.

- The **Siebente Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung zur Auswurfbegrenzung von Holzstaub -- 6. BImSchV)** (Seventh Regulation Implementing the Federal Immission Control Act (Regulation on Limiting Wood Dust Emissions)) contains emissions standards for facilities that work or process wood or derived wood products and that are not required to have a permit under BImSchG.

- The **Dreizehnte Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung ueber Grossfeuerungsanlagen -- 13. BImSchV)** (Thirteenth Regulation Implementing the Federal Immission Control Act (Regulation on Large Furnaces)) contains emissions standards for large furnaces, i.e., those that are required to have a permit under the terms of the BImSchG.

- The **Siebzehnte Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung ueber Verbrennungsanlagen fuer Abfaelle und aehnliche brennbare Stoffe -- 17. BImSchV)** (Seventeenth Regulation Implementing the Federal Immission Control Act (Regulation on Incinerators for Waste and Similar Combustible Materials)) contains emissions standards for incinerators that are required to have a permit under the terms of the BImSchG. It is also applicable if an incinerator is used primarily for the purpose of burning substances other than waste or materials similar to waste or if the incinerator is operated as a part of or as auxiliary equipment to another facility.

- The **Zwanzigste Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung zur Begrenzung der Kohlenwasserstoffemissionen beim Umfuellen und Lagern von Ottokraftstoffen -- 20. BImSchV)** (20th Regulation Implementing the Federal Immission Control Act (Regulation on Limiting Hydrocarbon Emissions in the Course of Transferring and Storing Gasoline)) regulates aspects of emission control in the area of gasoline storage and transfer in facilities that do not require a permit under the terms of the Federal Immission Control Act.

- The **Einundzwanzigste Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung zur Begrenzung der Kohlenwasserstoffemissionen bei der Betankung von Kraftfahrzeugen -- 21. BImSchV)** (21st Regulation Implementing the Federal Immission Control Act (Regulation on Limiting Hydrocarbon Emissions in the Course of Filling Motor Vehicles with Gasoline)) mandates the use of gas recycling systems in gas stations where the tanks of automobiles are filled with gasoline, if those gas stations do not require a permit under the terms of the Federal Immission Control Act.

- The **Verordnung zum Verbot von bestimmten die Ozonschicht abbauenden Halogenkohlenwasserstoffen (FCKW-Verbots-Verordnung)** (Regulation Prohibiting the Use of Certain Halogenated Hydrocarbons that Damage the Ozone Layer) regulates the use of certain halogenated hydrocarbons that contribute to the destruction of the ozone layer.

- The **Gesetz ueber die Umweltvertraeglichkeitspruefung (UVPG)** (Environmental Impact Statement Act) requires that environmental impact studies be done prior to the construction of or substantial modification to certain types of facilities under certain conditions. U.S. Forces in Germany are permitted to substitute an environmental review for full-blown environmental impact statements.

C. State Laws and Regulations -- Rheinland-Pfalz

- The **Landesgesetz zum Schutz vor Luftverunreinigungen, Geraeuschen und Erschuetterungen (Immissionsschutzgesetz)** (The State Act on the Control of Air Pollution, Noise, and Vibrations) establishes the general principle that facilities are to be designed, operated, and maintained in such a way that the neighborhood and the common good in general are protected from dangers, appreciable disadvantages, or outrageous nuisances to the extent that it is possible given the state of the art and economically feasible for facilities of the given type. The Act, however, raises no compliance issues in itself. It is, rather, an enabling act on the basis of which state regulations can be based. No such regulations were available at the time this manual was produced.

D. Key Compliance Definitions

- *Afterburners* - equipment for cleaning waste gas that is not operated independently as a separate furnace (13. BImSchV, Section 2(11)).

- *Air Pollutants* - changes in the natural composition of the air caused in particular by smoke, soot, dust, gases, aerosols, vapors, or odor-causing substances (BImSchG, Section 3(4)).

- *Bivalent Heating* - heating where oil or gas furnaces are operated in conjunction with a heat pump or a solar collector and where the heat pump or solar collector is used for more than merely heating the water in the system itself (1. BImSchV, Section 1(2)).

- *Center of the Waste Gas Stream* - the part of the waste gas stream that has the highest temperature at the center of the waste gas canal where the measuring hole is located (1. BImSchV, Section 2(8)).

- *Degree of Pollution Abatement* - the ratio of the difference between the weight of hydrocarbons brought to a facility and the weight of hydrocarbons emitted in the facility's waste gas to the weight of hydrocarbons brought to the facility (20. BImSchV, Section 2(1)).

- *Emission Limit Values* - the permissible concentrations of air pollutants in waste gas (13. BImSchV, Section 2(6)).

- *Emissions* - air pollutants, noise, vibrations, light, heat, radiation, and similar phenomena that are emitted by a facility (BImSchG, Section 3(3)).

- *Emissions Declaration* - a report on the kind, quantity, and spatial and temporal distribution of air pollutants emitted by a facility in a given period of time; the report also includes information on the conditions under which the emissions occur (BImSchG, Section 27(1)).

- *Existing Facilities* - with regard to emissions of halogenated hydrocarbons, existing facilities are those that were in existence prior to 1 March 1991 (2. BImSchV, Section 19).

- *Existing Furnaces* - furnaces that were approved for construction and operation before 1 July 1983 or of which the competent authority was to be officially notified under the terms of the Industrial Code before the Federal Immission Control Act went into effect [1 April 1974]; also included are those combustion facilities that were the object of a permit procedure on 1 July 1983, if emissions limits had already been set by the licensing authority (13. BImSchV, Section 2(3)).

- *Existing Incinerators* - incinerators for which
    1. project approval for construction and operation was granted under the terms of Section 7 para 1 of the Waste Act on or before 1 December 1990, or
    2. start of construction was agreed to on or before 1 December 1990 as part of a procedure leading to official approval of a plan under Section 7 para 1 of the Waste Act, or
    3. a permit under either Section 6 or Section 15 of BImSchG was granted on or before 1 December 1990 for construction and operation, or
    4. a preliminary ruling or partial permit was granted on or before 1 December 1990, if that preliminary ruling or partial permit includes requirements under Section 5 para Numbers 2 or 3 of BIMSchG.

  Facilities of whose existence the competent authority was to have been notified under the provisions of Section 67 para 2 of BImSchG or (if in operation before the passage of that Act) those of whose existence the competent authority must have been notified under the terms of Section 16 para 4 of the Commercial Code are also considered to be existing incinerators (17. BImSchV, Section 2(2)).

  (NOTE: The actual text of the Act does not list a date before which facilities are to be considered existing facilities for the purposes of the regulation.)

- *Facilities* - regular and established places of business and other permanent facilities, machines, equipment, other mobile technical equipment, and motor vehicles, as well as pieces of property on which are stored or deposited substances that can cause emissions or on which work is carried out that can cause emissions (BImSchG, Section 3(5)).

- *Facilities that Require A Permit* - those facilities that must have a permit issued under the terms of the Federal Immission Control Act. Such facilities are listed in Table 1-1.

- *Final Waste Gas Cleaning Equipment* - equipment downstream of a combustion facility that is used to remove gaseous air pollutants (13. BImSchV, Section 2(2)).

- *Fuels* - all materials supplied to a furnace, including any noncombustible components of that material (13. BImSchV, Section 2(4)).

- *Furnace* - a device that produces heat as a result of the combustion of fuels; the term includes fireplaces and, if present, connectors and exhaust equipment (1. BImSchV, Section 2(5)).

- *Furnace Emissions* - the air pollutants given off by a furnace; they are given as concentrations in milligrams (mg) per cubic meter (m^3), based on the volume of waste gas under standard conditions (273 degrees Kelvin (°K), 1013 kiloPascal (kPa) after deducting the quantity of moisture contributed by water vapor (13. BImSchV, Section 2(5) and 1. BImSchV, Section 2(4)).

- *Harmful Effects on the Environment* - immissions which, given their nature, their extent, or their duration, are capable of causing danger, appreciable disadvantage, or considerable nuisance to the community as a whole or to the neighborhood (BImSchG, Section 3(1)).

- *Highly Volatile Halogenated Hydrocarbons* - halogenated hydrocarbons with a boiling point of up to 423 °K (150 degrees Celsius (°C)) at 1013 millibar (mbar) (2. BImSchV, Section 1(1)).

- *Immissions* - air pollutants, noise, vibrations, light, heat, radiation, and similar effects on the environment that have an impact on human beings, plants, animals, soil, water, or the atmosphere, or on cultural or other property (BImSchG, Section 3(2)).

- *Large Furnaces* - furnaces with a heat output of 50 MW or more; they are required to have a permit under the BImSchG. Furnaces that are part of another facility that requires a permit under that act are also included (13. BImSchV, Section 2(7)).

  (NOTE: Facilities that are required to have a permit under the Federal Immission Control Act are listed in Table 1-1.)

- *Level of Sulfur Emissions* - the ratio of the sulfur content emitted in the waste gas to the sulfur content of the fuel supplied to the furnace. It is given as a percent (13. BImSchV, Section 2(13)).

- *Mixed Firings* - single firings that are carried out using two or more fuels simultaneously (13. BImSchV, Section 2(10)).

- *Mobile Equipment* - containers for the transport of gasoline by special vehicle, i.e., tank trucks, railroad tank cars, tankers (20. BImSchV, Section 2(4)).

- *Multifuel Firings* - single firings that are carried out with two or more fuels alternately (13. BImSchV, Section 2(9)).

- *New Facilities* - with regard to emissions of halogenated hydrocarbons, new facilities are those that came into being on or after 1 March 1991 (2. BImSchV, Section 19).

- *Nominal Thermal Output* - the highest useable quantity of heat produced per period of time by a furnace in continuous operation; if a furnace is designed to have a nominal thermal output that falls within a particular range, then the nominal thermal output is the highest useable thermal output well within that range that is listed on a plate on the furnace. If there is no plate, then the upper limit of the range is considered to be the nominal thermal output (1. BImSchV, Section 2(10)).

- *Oil Derivatives* - organic substances that are not easily volitalized that are deposited on filter paper in the course of determining the opacity number (1. BImSchV, Section 2(11)).

- *Opacity Number* - the number for the degree of blackness that the particulate emissions in waste gas show on the R gelmann Scale. The degree of blackness is a function of optical reflectivity; an increase of one in opacity number corresponds to a decrease in reflectivity of 10 percent (1. BImSchV, Section 2(12)).

- *Ozone-Depleting Halogenated Hydrocarbons* - for the purposes of this section, the following are considered ozone-depleting halogenated hydrocarbons:
  - trichlorofluoromethane
  - dichlorodifluoromethane
  - chlorotrifluoromethane
  - tetrachlorodifluoroethane
  - trichlorotrifluoroethane
  - chloropentafluoroethane
  - bromochlorodifluoromethane (Halon 1211)
  - bromotrifluoromethane (Halon 1301)
  - dibromotetrafluoroethane (Halon 2402)
  - carbon tetrachloride
  - 1,1,1-trichloroethane

  (FCKW-Halon-Verbots-Verordnung, Section 1(1)).

- *Residual Materials* - in the context of incinerators, residual materials are all those materials that accumulate in the course of the transformation of energy or in the course of producing, treating, or processing, whether or not it is the purpose of the facility to generate that material (17. BImSchV, Section 2(4).

- *Small Furnaces* - furnaces that do not require a permit under the BImSchG; they have a heat output of less than 50 MW. The following are not considered furnaces for the purposes of this protocol:
  1. state-of-the-art furnaces that can be operated without equipment for venting waste gases, i.e., infrared heaters
  2. devices that are intended to dry goods via direct contact with waste gases or to back or otherwise prepare foods via direct contact with waste gases
  3. devices that one may reasonably expect, given the circumstances, not to be operated at the same location for a period longer than the three months (mo) that follow start-up

  (1. BImSchV, Section 1(1)).

- *State of the Art* - the state of development achieved by advanced processes, equipment, or methods of operation that allows one to consider their practical suitability as measures for limiting emissions to have been established. In determining whether a process, a piece of equipment, or a method of operation has achieved state-of-the-art status, comparable processes, equipment, or methods of operation that have been successfully tested in actual operation are to be considered (BImSchG, Section 3(6)).

- *Substantial Modification* - a change that may significantly effect the kind or amount of emissions; as a rule, as substantial modification is present when
    1. a furnace is switched to another fuel, unless the furnace is designed to use fuels alternately
    2. a boiler is exchanged
    3. a change in nominal heating capacity, unless it is not significant enough to result in changes in the way in which the furnace must be monitored

  (1. BImSchV, Section 2(13)).

- *Thermal Output* - the heat content (based on net calorific value) of the fuel that is supplied to a furnace in continuous operation per unit of time for the purpose of attaining its permitted output (13. BImSchV, Section 2(8) and (1. BImSchV, Section 2(6)).

- *Thermal Value Devices* - [German: *Brennwertgeraete*] heat generators that are constructed in such a way as to render the vaporization heat of water vapor in waste gas useful by means of condensation (1. BImSchV, Section 2(3)).

- *Trip Threshold* - [German: *Ausloeseschwelle*] is the concentration of a substance in the air of the workplace or in the body which, when exceeded, makes necessary additional measures for the protection of health. The trip threshold is considered to have been exceeded when processes are used during which measures for the protection of health are necessary or when direct contact with the skin occurs (GefStoffV, Section 15(7)).

- *Untreated Wood* - wood that has been subjected to mechanical processing only and that has not been more than contaminated to any significant degree with harmful substances in the course of its use (1. BImSchV, Section 2(9)).

- *Waste Gas Loss* - the difference between the heat content of the waste gas and that of the furnace air, relative to the calorific value of the fuel (1. BImSchV, Section 2(1)).

- *Waste Gases* - carrier gases including solid, liquid, and/or gaseous emissions; the volume of the waste gas stream is based on the volume of waste gas under standard conditions (273 °K, 1013 mbar) after deducting the quantity of moisture contributed by water vapor (13. BImSchV, Section 2(1)).

- *Waste Oil* - used semi-fluid or fluid materials that consist in whole or in part of petroleum or synthetic oil; the term included oil-containing residues from tanks, emulsions, and water-oil mixtures (Abfallgesetz, Section 5a(1)).

- *Wood Preservatives* - materials with a biocidal effect on insects, fungi harmful to wood, and fungi that discolor wood that are used in the course of processing or treating wood; also included are materials that decrease the inflammability of wood (1. BImSchV, Section 2(7)).

AIR EMISSIONS MANAGEMENT PROTOCOL

GUIDANCE FOR CHECKLIST USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PEOPLE OR GROUPS: (*)
All Installations	1-1 through 1-5	(1)(2)(4)(5)(6)(10)
Facilities that Require Permits Under BImSchG		
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Emissions Declarations	1-16 and 1-17	(1)(3)
Other Reports	1-18 and 1-19	(1)(3)
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Large Furnaces		
General Requirements	1-25 through 1-29	(1)(3)(9)
Existing Large Furnaces	1-30 and 1-31	(1)(3)
Measurement, Monitoring, and Reporting	1-32 through 1-39	(1)(3)
Recording and Evaluating Continuous Monitoring	1-40 through 1-46	(1)(3)
Reports of the Results of Continuous Monitoring	1-47	(1)(3)
Calibration and Inspection of Continuous Monitoring Equipment	1-48 through 1-51	(1)(3)
Stacks, Gas Temperature	1-52 and 1-53	(1)(3)
Mixed Firing and Multifuel Firings	1-54	(1)(3)
Particulate Emission Standards during Transport and Storage	1-55 through 1-57	(1)(3)

(*)CONTACT/LOCATION CODE:

(1) BCE (Base Civil Engineering/Environmental Planning)
(2) BEE (Bioenvironmental Engineering)
(3) Air Pollution Source Operator
(4) Fuels - Management Branch
(5) Transportation - Maintenance Branch
(6) LGS (Base Supply)
(7) MWR (Morale, Welfare, and Recreation) Auto Hobby Shop
(8) Refrigeration Shops (BCE)
(9) Equipment Maintenance Squadron
(10) AAFES (Army/Air Force Exchange Service) Gas Station

AIR EMISSIONS MANAGEMENT PROTOCOL

GUIDANCE FOR CHECKLIST USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PEOPLE OR GROUPS: *
Small Furnaces		
General Requirements	1-58 through 1-61	(1)(3)
Nominal Thermal Output Higher than 15 kW	1-62 through 1-64	(1)(3)
Small Oil or Gas Furnaces	1-65 through 1-73	(1)(3)
Incinerators		
Operating Requirements	1-74 through 1-80	(1)(3)
Delivery and Intermediate Storage of Combustibles	1-81 and 1-82	(1)(3)
Emission Standards	1-83 through 1-85	(1)(3)
Handling of Residues from Incinerators	1-86 through 1-92	(1)(3)
Measurements and Supervision	1-93 through 1-104	(1)(3)
Existing Incinerators	1-105	(1)(3)
Incinerators -- Public's Right to Know	1-106	(1)(3)

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AIR EMISSIONS MANAGEMENT PROTOCOL

GUIDANCE FOR CHECKLIST USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PEOPLE OR GROUPS: *
Surface Treatment Facilities	1-107 through 1-122	(1)(3)
Dry-cleaning Facilities	1-123 through 1-130	(1)(3)
Ozone-depleting Halogenated Hydrocarbons	1-131 through 1-135	(1)(3)(6)(8)(9)(10)
Transfer and Storage of Gasoline		
General Requirements	1-136	(1)(3)
Facilities with Gas Displacement Systems	1-137 through 1-139	(1)(3)(4)(5)(10)
Facilities without Gas Displacement Systems	1-140 and 1-141	(1)(3)(4)(5)(10)
Gas Stations for Automobiles	1-142	(1)(3)(4)(5)(10)
Gas Stations--Supervision, Notification, etc.	1-143 through 1-146	(1)(3)(4)(5)(10)

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AIR EMISSIONS MANAGEMENT

Records to Review

- Host Country air pollution control regulations
- Emissions inventory
- All air pollution source permits
- Plans and procedures applicable to air pollution control
- Emission monitoring records
- Opacity records
- Instrument calibration and maintenance records
- Reports/complaints concerning air quality
- Air Emergency Episode Plan
- Host Country regulatory inspection reports
- Documentation of preventive measures or actions
- Results of air sampling at the conclusion of response action

Physical Features to Inspect

- All air pollution sources (fuel burners, incinerators, VOC sources, etc.)
- Air pollution monitoring and control devices
- Air emission stacks
- Air intake vents

Sources to Interview

- BCE (Base Civil Engineering/Environmental Planning)
- BEE (Bioenvironmental Engineering)
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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL INSTALLATIONS	
1-1. Determine actions or changes since previous review of Air Emissions Management.	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report. (1)(2)
...	...
1-2. Installations should maintain a file of German laws and regulations pertaining to Air Emissions Management (GMP).	Verify that copies of the following federal laws and regulations are kept at the installation: (1)(2) - *Gesetz zum Schutz vor schaedlichen Umwelteinwirkungen durch Luftverunreinigungen, Geraeusche, Erschuetterungen und aehnliche Vorgaenge (Bundes-Immissionsschutzgesetz -- BImSchG)* - *Erste Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung ueber Kleinfeuerungsanlagen -- 1. BImSchV)* - *Zweite Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung zur Emissionsbegrenzung von leichtfluechtigen Halogenkohlenwasserstoffen -- 2. BImSchV)* - *Dritte Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung ueber Schwefelgehalt von leichtem Heizoel und Dieselkraftstoff -- 3. BImSchV)* - *Vierte Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung ueber Genehmigungsbeduerftige Anlagen -- 4. BImSchV)* - *Fuenfte Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung ueber Immissionsschutzbeauftragte -- 5. BImSchV)* - *Sechste Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung ueber die Fachkunde und Zuverlaessigkeit der Immissionsschutzbeauftragten -- 6. BImSchV)* - *Siebente Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung zur Auswurfbegrenzung von Holzstaub -- 7. BImSchV)* - *Elfte Verordnung zur Durchfuehrung des lBundes-Immissionsschutzgesetzes (Emissionserklaerungsverordnung -- 11. BImSchV)* - *Dreizehnte Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung ueber Grossfeuerungsanlanlagen -- 13. BImSchV)* - *Siebzehnte Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung ueber Verbrennungsanlagen fuer Abfaelle und aehnliche brennbare Stoffe -- 17. BImSchV)* - *Zwanzigste Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung zur Begrenzung der Kohlenwasserstoffemissionen beim Umfuellen und Lagern von Ottokraftstoffen -- 20. BImSchV)*

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-2. (continued)	- *Einundzwanzigste Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung zur Begrenzung der Kohlenwasserstoffemissionen bei der Betankung von Kraftfahrzeugen -- 21. BImSchV)* - *Verordnung zum Verbot von bestimmten die Ozonschicht abbauenden Halogenkohlwasserstoffen (FCKW-Verbots-Verordnung)* - *Gesetz ueber die Umweltvertraeglichkeitspruefung (UVPG).* Verify that copies of the following state laws and regulations for Rheinland-Pfalz are kept at the installation if appropriate: - *Landesgesetz zum Schutz vor Luftverunreinigungen, Geraeuschen und Erschuetterungen (Immissionsschutzgesetz).*
...	...
1-3. The content of sulfur in light fuel oil and diesel fuel that are in use on the installation is limited (3. BImSchV, Section 3(1)).	Verify that the light fuel oil and diesel fuel in use on the installation do not contain sulfur compounds (given as elemental sulfur) totalling more than 0.2 percent of the weight of the fuel. (1)(4)(5)(10)
...	...
1-4. The use of products that contain vinyl chloride as an aerosol propellant is prohibited (PCB-, PCT-, VC-Verbotsverordnung, Sections 1 and 2).	Verify that products that contain vinyl chloride as an aerosol propellant are not in use on the installation. (1)(6) (NOTE: The prohibition on use does not apply to proper waste disposal or thermal recycling in a properly permitted facility.)
...	...
1-5. An environmental review must be filed prior to construction of or substantial modification to certain facilities (UVPG, Section 3(1)).	Verify that environmental reviews are submitted prior to the construction of or significant modification to the following facilities: (1)(2) - power plants, heating power stations, heating stations, and other furnaces in which solid, liquid, or gaseous fuels are to be used if the nominal thermal capacity is greater than 200 MW - facilities for the application of protective coatings of lead, tin, or zinc to metal surfaces using molten baths or flame spraying, if the annual throughput is more than 100,000 tons of raw material.
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
FACILITIES THAT REQUIRE PERMITS UNDER BImSchG **General Requirements**	
1-6. The construction and operation of certain facilities require a permit under the Federal Immission Control Act, as do significant modifications to those facilities (BImSchG, Section 4(1), 15(1); 4. BImSchV, Section 1(1)).	Determine whether the facility is listed in either Chart One or Chart Two of Table 1-1. (1)(2) Verify that permits exist for the construction and operation of the facility if it is listed in Table 1-1. Verify that permits exist for significant modifications to facilities listed in Table 1-1.
...	...
1-7. Facilities that require a permit under the BImSchG (Federal Immission Control Act) must be operated in accordance with certain general principles (BImSchG, Section 5).	Verify that facilities that require a permit under the BImSchG are constructed and operated in such a way that: (1)(2)(3) - harmful effects on the environment and other dangers, appreciable disadvantages, or considerable nuisance to the community as a whole *or the neighborhood do not occur* - precautions are taken against harmful effects on the environment, especially by using state-of-the-art methods to limit emissions - any heat produced is used by the installation or given over to third parties who have declared themselves willing to accept it, to the extent that doing so is both technically feasible given the type and location of the facility and consistent with carrying out the preceding principles. (NOTE: The BImSchG empowers the government to issue regulations that determine which facilities must so manage the heat they produce, but no such enactments have yet been discovered) Verify that facilities that require a permit are shut down in such a way that neither the facilities nor the property on which they are located cause harmful effects on the environment or other dangers, appreciable disadvantages, or considerable nuisance to the community as a whole or the neighborhood.
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Immissions Control Officers	
1-8. Certain facilities that require a permit under BImSchG must formally appoint a qualified person to the position of Immissions Control Officer in writing (BImSchG, Section 53(1), 55(1); 5. BImSchV, Section 1(1)).	Verify that the facilities listed in Table 1-2 have a qualified Immissions Control Officer who has been formally appointed in writing. (1)(3)
...	...
1-9. The Immissions Control Officer must have fulfilled certain requirements related to education, experience, and dependability (6. BImSchV, Sections 1 and 5(1).	Verify that the person appointed to the position of Immissions Control Officer meets the following requirements: (1)(3) - has concluded a university-level course of study in the fields of engineering, chemistry, physics, or environmental technology, and - has had 2 years (yr) of practical experience with the types of facilities to be overseen or ones that are similar from the point of view of immissions. (NOTE: Only one year's practical experience is required of persons who have concluded university-level courses of study in environmental technology.) (NOTE: Practical experience is supposed to have provided the person with knowledge of processes and construction technology, with knowledge of the techniques of measurement, supervision, and limiting of emissions, and with knowledge of techniques for reporting and preventing emissions. In addition, practical experience is supposed to have provided the appointee with knowledge about the environmental impacts that products may have, about the processes of proper reuse of residual substances and proper recycling of products, and about the provisions of Immissions Control Act.) (NOTE: Persons are considered dependable if they exhibit personality traits, behavior, and capacity that enable them to meet the responsibilities with which they are charged.) (NOTE: The competent authority may recognize other educational and practical experience as fulfilling the above requirements.)
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-10. The Immissions Control Officer must be charged in writing with certain responsibilities (BImSchG, Section 54).	Verify that the Immissions Control Officer has been charged with and carries out the following responsibilities: (1)(3) - advises the installation in affairs that might be of import from the point of view of immissions control - works toward the development and introduction of environmentally friendly processes, including waste reduction and proper recycling - serves as a co-worker in the development and introduction of environmentally friendly processes, in particular as an advisor on processes from the perspective of care for the environment - monitors compliance with the provisions of BImSchG and of regulations based on it and with such conditions and stipulations as have been issued, in particular by inspecting the facility at regular intervals, taking measurements of emissions and immissions, informing the installation of deficiencies and suggestions for eliminating those deficiencies - instructs installation personnel on the environmental impact of the installation and on equipment and measures that could reduce that impact given the requirements of the BImSchG - reports yearly to installation authorities on measures that have been or will be taken in the course of carrying out his/her responsibilities.
...	...
1-11. The installation has certain specific responsibilities with regard to the Immissions Control Officer (BImSchG, Section 55).	Verify that the installation has given the Immissions Control Officer a copy of the formal notification to the competent authority of his/her appointment. (1)(3) Verify that the Immissions Control Officer is informed of his/her duties and of any changes that may occur in them. Verify, if more than one Immissions Control Officer is appointed, that the installation provides for coordination between them. Verify that the installation supports the Immissions Control Officer in carrying out his/her tasks, in particular that the Immissions Control Officer has adequate staff and resources. Verify that possibilities for continuing education exist for the Immissions Control Officer.
...	...
1-12. Facilities must meet reporting requirements with regard to Immissions Control Officers (BImSchG, Section 55(1).	Verify that the competent authority has been informed of the identity of the Immissions Control Officer. (1)(3) Verify that the competent authority has been informed of the tasks that have been assigned to the Immissions Control Officer. Verify that the competent authority is informed if the identity of the Immissions Control Officer changes and/or if the tasks assigned to him change.
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Incidents Officers	
1-13. Certain facilities that require a permit under BImSchG are required to appoint an Incidents Officer (BImSchG, Section 58a(1)).	(NOTE: No legislation has yet been discovered that specifies which facilities are in fact required to make such an appointment.)
...	...
1-14. The Incidents Officer must discharge certain responsibilities (BImSchG, Section 58b).	Verify that the Incidents Officer: (1)(3) - works toward improved safety on the installation - informs the proper installation authorities of disruptions in ordinary operations that could lead to dangers for the general public and the neighborhood - monitors compliance with the provisions of BImSchG and of regulations based on it with a view toward preventing disruptions in normal operations - informs the installation of deficiencies and suggestions for eliminating those deficiencies - immediately informs installation authorities of deficiencies related to fire protection and emergency response - reports annually to installation authorities on measures that have been or will be taken in the course of carrying out his/her responsibilities - keeps records of the reports made to the installation authorities of disruptions in ordinary operations that could lead to dangers for the general public and the neighborhood and keeps these reports for no fewer than 5 yr.
...	...
1-15. The installation has certain specific responsibilities with regard to the Incidents Officer (BImSchG, Section 58c).	Verify that the installation has given the Incidents Officer a copy of the formal notification to the competent authority of his/her appointment. (1)(3) Verify that the Incidents Officer is informed of his/her duties and of any changes that may occur in them. Verify, if more than one Incidents Officer is appointed, that the installation provides for coordination between them. Verify that the installation supports the Incidents Officer in carrying out his/her tasks, in particular that the Incidents Officer has adequate staff and resources. Verify that possibilities for continuing education exist for the Incidents Officer.
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Emissions Declarations	
1-16. Facilities that require a permit under the Federal Immission Control Act must file emissions declarations with the competent authority and update them biennially (BImSchG, Section 27(1); 11. BImSchV, Section 1(1), 3(2), Section 5).	(NOTE: Calendar year 1992 was the first year for which an emissions declaration was to be submitted.) (1)(3) Determine whether the facility is listed in Table 1-1 and whether an exemption from the reporting requirement is noted there. Verify that an emissions declaration is filed with the competent authority by 30 April of the year following the declaration period, if the facility is not exempt from the reporting requirement. Verify that the emissions declaration is up-dated biennially.
...	...
1-17. Supporting documentation for the emissions declaration is to be kept for at least 4 yr after the submission of the declaration (11. BImSchV, Section 6(2)).	Verify that supporting documentation for the emissions declaration is kept for at least 4 yr after the submission of the declaration. (1)(3)
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Other Reports	
1-18. Facilities that require a permit under the Federal Immission Control Act are subject to certain reporting requirements (BImSchG, Section 16(1)).	Verify that facilities that require a permit under the Federal Immission Control Act file biennial reports with the competent authority on whether, and if so to what extent, deviations from the terms of the permit or substantiating documents included in the permit have occurred. (1)(3) (NOTE: Information that is included in required emissions declarations does not need to be included in this report.) Verify that the installation informs the competent authority of its intention to shut down a facility that requires a permit and of the time that the shutdown is expected to occur.
...	...
1-19. Facilities that are required to have a permit under BImSchG are required to report to the competent authority on the way in which they are ensuring that the provisions and requirements for environmental protection are being met at the facility (BImSchG, Section 52a(2)).	Verify that facilities that are required to have a permit under BImSchG report to the competent authority on the way in which they are ensuring that the provisions and requirements for environmental protection are being met at the facility. (1)(3) (NOTE: The BImSchG specifies neither the form nor the frequency of this report.)
...	...
FACILITIES THAT DO NOT REQUIRE PERMITS UNDER BImSchG	
General Requirements	
1-20. Facilities that do not require a permit under the BImSchG must meet certain general operating requirements (BImSchG, Section 22(1)).	Verify that facilities that do not require a permit under the BImSchG are constructed and operated in such a way that: (1)(3) - those harmful effects on the environment are prevented that are avoidable given the state of the art - those harmful effects on the environment that are unavoidable given the state of the art are kept to an absolute minimum. (NOTE: Non-commercial facilities and those that are not part of economic enterprises are obligated to adhere to the above principles only insofar as air and noise pollution are concerned.)
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Woodworking	(NOTE: The competent authority may grant exemptions from the requirements of this section of the Air Emissions Management protocol.)
1-21. Facilities for the working or processing of wood or derived timber products that do not require a permit under BImSchG must be equipped with exhaust cleaning equipment that keeps emissions of wood dust, chips, and/or shavings under certain limits (7. BImSchV, Sections 2 and 4).	Verify that facilities for the working or processing of wood or derived timber products that do not require a permit under BImSchG are equipped with exhaust cleaning equipment that keeps emissions under 50 mg/m^3 at standard conditions or under the limits specified in Table 1-5. (1)(3)(7) (NOTE: Standard conditions exist at 0 ^{o}C and 1013 mbar.) (NOTE: Facilities constructed after 1 January 1977 must be operated in such a way that the concentration by weight of wood dust, chips, and/or shavings in their exhausted air does not exceed 20 mg/m^3 at standard conditions.) (NOTE: If several facilities are in close spatial and operation contiguity with one another, the total of their exhaust streams must be used in evaluating compliance with these requirements.) (NOTE: Storage and transfer facilities for wood dust, chips, and/or shavings must also be considered when evaluating compliance with this requirement.) (NOTE: Exhaust cleaning equipment is not necessary if other measures or operating methods (such as using fresh wood or wet-working) or the use of other kinds of mechanical transfer equipment enable the facility to comply with the limits in Table 1-5.)
...	...
1-22. Wood dust, chips, and/or shavings must be stored in bunkers, silos, or other enclosed areas (7. BImSchV, Section 3(1)).	Verify that wood dust, chips, and/or shavings are stored in bunkers, silos, or other enclosed areas. (1)(3)(7)
...	...
1-23. Bunkers and silos for the storage of wood dust, chips, and/or shavings must be provided with equipment that measures the degree to which the facility is full and with equipment that prevents overfilling (7. BImSchV, Section 3(2)).	Verify that bunkers and silos for the storage of wood dust, chips, and/or shavings are provided with equipment that measures the degree to which they they full and with equipment that prevents overfilling. (1)(3)(7)
...	...

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
1-24. Storage facilities and filters are to be emptied and cleaned in such a way that emissions of wood dust, chips, and/or shavings are avoided as far as possible (7. BImSchV, Section 3(3)).	Verify that storage facilities and filters are emptied and cleaned in such a way that emissions of wood dust, chips, and/or shavings are avoided as far as possible (7. BImSchV, Section 3(3)). (NOTE: Emissions may be avoided through the use of closed containers or through wetting the material at the point of exit.) (1)(3)(7)
...	...
LARGE FURNACES **General Requirements**	
1-25. Large furnaces that burn solid fuels must meet certain emissions requirements (13. BImSchV, Sections 3 through 7).	Verify that the installation's solid-fuel-burning furnaces meet the standards in Table 1-6. (1)(3)(9) (NOTE: These standards must also be observed when the heating surface is being cleaned.) (NOTE: For sulfur and halon emissions, start-up periods in which twice the emissions listed in Table 1-6 occur are not taken into consideration.)
...	...
1-26. The competent authority must be notified immediately when the equipment that reduces sulfur and/or halon emissions is off-line (13. BImSchV, Section 6(6) and 7(2)).	Verify that the competent authority is notified immediately when the equipment that reduces sulfur emissions goes off-line. (1)(3) (NOTE: Furnaces may be operated even when the equipment that reduces sulfur emissions is off-line, provided that the off-line time does not exceed 72 consecutive hours (h) and a total of 240 h per calendar year.) (NOTE: Furnaces may be operated even when the equipment that reduces inorganic halogen emissions is off-line, provided that the off-line time does not exceed 72 consecutive h and a total of 240 h per calendar year.)
...	...
1-27. Large furnaces that burn liquid fuel are subject to emission requirements (13. BImSchV, Sections 8 through 12).	Verify that the installation's liquid-fuel-burning furnaces meet the emission requirements in Table 1-7. (1)(3) (NOTE: These standards must also be observed when the heating surface is being cleaned.)
...	...

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-28. The competent authority must be notified immediately when the equipment that reduces sulfur and/or halon emissions is off-line (13. BImSchV, Section 11(6)).	Verify that the competent authority is notified immediately when the equipment that reduces sulfur emissions goes off-line. (1)(3) (NOTE: Furnaces may be operated even when the equipment that reduces sulfur emissions is off-line, provided that the off-line time does not exceed 72 consecutive h and a total of 240 h per calendar year.) (NOTE: Furnaces may be operated even when the equipment that reduces inorganic halogen emissions is off-line, provided that the off-line time does not exceed 72 consecutive h and a total of 240 h per calendar year.)
...	...
1-29. Large furnaces that burn gaseous fuel are required to meet certain emission standards (13. BImSchV, Sections 13 through 16).	Verify that the installation's gaseous-fuel-burning furnaces meet the requirements in Table 1-8. (1)(3)
...	...
Existing Large Furnaces	
1-30. Existing large furnaces are subject to specific emission standards (13. BImSchV, Sections 17 through 20).	Verify that existing large furnaces meet the emission standards in Table 1-9. (1)(3)
...	...
1-31. The competent authority must be notified immediately when the equipment that reduces sulfur emissions is off-line (13. BImSchV, Section 20(5)).	Verify that the competent authority is notified immediately when the equipment that reduces sulfur emissions goes off-line. (1)(3) (NOTE: Furnaces may be operated even when the equipment that reduces sulfur emissions is off-line, provided that the off-line time does not exceed 72 consecutive h and a total of 240 h per calendar year.)
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Measurement, Monitoring, and Reporting	
1-32. Subsequent to the construction of new furnaces and significant modifications to new or existing furnances, compliance with emission standards must be demonstrated. (13. BImSchV, Section 22(1)).	Verify that reports are filed with the appropriate agency to show compliance with the relevant emission limit values from Tables 1-6 through 1-9 after no fewer than 3 mo of operation but no more than 12 mo after start-up. (1)(3) Verify that such reports are filed subsequently at the end of every 3 yr period. (NOTE: It is not clear which agency is considered to be the appropriate one.) (NOTE: This requirement does not apply to furnaces that have continuous monitoring equipment that records its results automatically.) (NOTE: If furnaces that burn liquid fuel can demonstrate compliance with the requirements for sulfur by using a fuel that ensures compliance, they are not subject to this requirement.) (NOTE: In certain instances, compliance is demonstrated when measuring equipment is calibrated, i.e., every 3 yr for large furnaces with a thermal output greater than 300 MW, every 5 yr for all other large furnaces.)
...	...
1-33. For large furnaces that use liquid fuel that ensures compliance with the sulfur emission limit values, documentation must be kept on the sulfur-content of that fuel and its net calorific value for 3 yr (13. BImSchV, Section 22(3)).	Verify that for large furnaces that use a particular liquid fuel that ensures compliance with the sulfur emission limit values documentation is kept on the sulfur-content of that fuel and its net calorific value for 3 yr. (1)(3)
...	...
1-34. The equipment used to take measurements that demonstrate compliance is to be state-of-the-art (13. BImSchG, Section 23(1)).	Verify that state-of-the-art measuring equipment is employed to take the measurements used to demonstrate compliance with emission standards. (1)(3)
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-35. For determining compliance, at least three individual measurements one-half hour in duration are to be taken when the furnace is in operation (13. BImSchG, Section 23(1)).	Verify that, for determining compliance, at least three individual measurements one-half hour in duration are taken when the furnace is in operation (13. BImSchG, Section 23(1)). (1)(3) (NOTE: The results are to be given as half-hourly values.) (NOTE: If the half-hour time period cannot be adhered to in particularly difficult circumstances, the individual measurement must not exceed 2 h.) (NOTE: The emission standards are considered to have been complied with if the result of each individual measurement does not exceed the relevant standard.)
...	...
1-36. The results of measurements taken to determine compliance with emission standards are to be reported to the competent authority without delay (13. BImSchV, Section 24(1)).	Verify that the results of measurements taken to determine compliance with emission standards are reported to the competent authority without delay. (1)(3)
...	...
1-37. The reports of results of measurements taken to determine compliance with emissions standards must meet certain requirements (13. BImSchV, Section 25(2)).	Verify that the reports of results of measurements taken to determine compliance with emissions standards contain the following: (1)(3) - a report of the result of each individual measurement - information on the method by which each measurement was taken - information on the operating conditions under which each measurement was taken - information on the fuels used - information on the operating conditions of the emission reduction equipment.
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-38. Monitoring equipment that operates continuously is required to be installed on certain large furnaces (13. BImSchV, Section 25).	Verify that all furnaces are equipped with a device that provides continous readings on the concentration by weight of carbon monoxide in the waste gas. (1)(3) Verify that all furnaces are equipped with a device that provides continuous readings on the amount of oxygen in the waste gas. Verify that furnaces that burn solid or liquid fuel are equipped with a device that provides continuous readings on the concentration by weight of particulate matter in the waste gas. Verify that furnaces that burn solid or liquid fuel are equipped with a device that provides continuous readings on the the concentration of sulfur dioxide and sulfur trioxide in the waste gas. (NOTE: This does not apply to furnaces for liquid fuel that burn light fuel oil or diesel fuel that does not contain sulfur compounds (given as elemental sulfur) totalling more than 0.2 percent of the weight of the fuel.) Verify that furnaces that burn solid or liquid fuel as well as furnaces that burn gaseous fuel and have a thermal output of more than 400 MW are equipped with a device that provides continuous readings on the concentration of nitrogen monoxide and nitrogen dioxide in the waste gas. (NOTE: If measurements show that nitrogen dioxide contributes less than 5 percent to the total emissions of oxides of nitrogen, the requirement for continuous monitoring does not apply, and the contribution of nitrogen dioxide to the total may be estimated.) (NOTE: If the continuous monitoring requirement does apply, the measuring equipment must be in place no later than 6 mo after the furnace is first started up.)
...	...
1-39. It must be demonstrated that certain types of large furnaces comply with sulfur emission standards either by on-going recording of appropriate operating statistics or by recording of statistics on the efficiency of final waste gas cleaning equipment (13. BImSchV, Section 25(5)).	Verify that compliance with the relevant standards for sulfur emissions can be demonstrated for the following types of furnaces either on the basis of on-going recording of appropriate operating statistics or on the basis of recording of statistics on the efficiency of final waste gas cleaning equipment: (1)(3) - large furnaces that burn solid fuel - large furnaces that burn solid fuel and have grate-firing or coal-dust firing and a thermal output greater than 100 but less than 300 MW inclusive - large furnaces that burn liquid fuel - large furnaces that burn liquid fuel with a thermal output greater than 100 but less than 300 MW inclusive.
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Recording and Evaluating Continuous Monitoring	
1-40. The continuous measurements of transient values required above must be recorded automatically along with the furnace's output when the furnace is operating (13. BImSchV, Section 26(1)).	Verify that the continuous measurements required in item 1-38 are recorded automatically along with the furance's output when it is operating.
...	...
1-41. The half-hourly average value is to be calculated for each consecutive half-hour period, as is the daily average value for each calendar day (13. BImSchV, Section 26(1)).	Verify that the half-hourly average value is calculated for each consecutive half-hour period, and that the daily average value for each calendar day is calculated as well. (1)(3)
...	...
1-42. The half-hourly average values and the daily average values are to be adjusted to the proper reference value for oxygen content in the waste gas and are then to be classified and stored as frequency distributions. (13. BImSchV, Section 26(3)).	Verify that the half-hourly average values and the daily average values are adjusted to the proper reference value for oxygen content in the waste gas and are then classified and stored as frequency distributions. (1)(3)
...	...
1-43. The number of classes into which half-hourly average values are to be distributed must be 20 or greater, and the tenth class is to be in the area of the relevant emission limit (13. BImSchV, Section 26(3)).	Verify that the number of classes into which half-hourly average values are to be distributed is 20 or greater, and the tenth class is in the area of the relevant emission limit (13. BImSchV, Section 26(3)). (1)(3)
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-44. The frequency distributions calculated above must be handled in certain ways (13. BImSchV, Sections 26(3)).	Verify that recording of the frequency distributions begins anew each calendar year. (1)(3) Verify that the frequency distributions can be viewed at all times. Verify that the frequency distributions are recorded once daily.
...	...
1-45. The records that result from the monitoring and the processing of its results required in this section must be kept for 3 yr (13. BImSchV, Section 26(4)).	Verify that the records that result from the monitoring and processing of its results required in this section are kept for 3 yr. (1)(3)
...	...
1-46. A certificate from an agency of the appropriate competent higher-level state authority that attests to the proper installation of automatic measuring equipment must be presented to the competent authority (13. BImSchV, Section 26(5)).	Verify that a certificate from an agency of the appropriate competent higher-level state authority that attests to the proper installation of automatic measuring equipment has been presented to the competent authority. (1)(3)
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Reports of the Results of Continuous Monitoring	
1-47. Reports on the results of required continuous monitoring and on the results of evaluating them must be presented to the competent authority within 3 mo after the end of each calendar year (13. BImSchV, Section 27(1).	Verify that reports on the results of required continuous monitoring and on the results of evaluating them is presented to the competent authority within 3 mo after the end of each calendar year. (1)(3) (NOTE: The emission standards are considered to have been complied with if analysis of the above report demonstrates that for the operating hours in a given calendar year: - none of the daily average values exceeds the emission standard - 97 percent of all half-hourly average values do not exceed six-fifths of the emission standard, and - none of the half-hourly values exceed twice the emission standard.) (NOTE: The prescribed sulfur emission standards are considered to have been met if the on-going recording of appropriate operating statistics or the recording of statistics on the efficiency of final waste gas cleaning equipment can reasonably be considered to comply with the requirements in the foregoing note when appropriately adjusted.)
...	...
Calibration and Inspection of Continuous Monitoring Equipment	
1-48. For furnaces with a thermal output greater than 300 MW, the measuring equipment that continuously monitors the concentrations of particulate and/or gaseous emissions and records its results must be calibrated by an agency of the competent highest-level authority at 3 yr intervals (13. BImSchV, Section 28(1)).	Verify that, for furnaces with a thermal output greater than 300 MW, the measuring equipment that continously monitors the concentrations of particulate and/or gaseous emissions and records its results is calibrated by an agency of the competent highest-level authority at 3 yr intervals. (1)(3)
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-49. For furnaces other than those with a thermal output greater than 300 MW, the measuring equipment that continously monitors the concentrations of particulate and/or gaseous emissions and records its results must be calibrated by an agency of the competent highest-level authority at 5 yr intervals (13. BImSchV, Section 28(1)).	Verify that, for furnaces other than those with a thermal output greater than 300 MW, the measuring equipment that continously monitors the concentrations of particulate and/or gaseous emissions and records its results is calibrated by an agency of the competent highest-level authority at 5 yr intervals. (1)(3)
...	...
1-50. For all large furnaces, the measuring equipment that continously monitors the concentrations of particulate and/or gaseous emissions and records its results must be inspected for functionality by an agency of the competent highest-level authority once a yr (13. BImSchV, Section 28(1)).	Verify that, for all large furnaces, the measuring equipment that continously monitors the concentrations of particulate and/or gaseous emissions and records its results is inspected for functionality by an agency of the competent highest-level authority once a yr. (1)(3)
...	...
1-51. Reports on the results of calibration and inspections for functionality are to be submitted to the competent authority within four weeks of the calibration and/or inspection (13. BImSchV, Section 28(3)).	Verify that reports on the results of calibration and inspections for functionality are submitted to the competent authority within four weeks of the calibration and/or inspection. (1)(3)
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Stacks, Gas Temperature	
1-52. Waste gases from large furnaces must be discharged via a stack that meets specific height requirements (13. BImSchV, Section 29(1)).	Verify that the waste gases from large furnaces are discharged via a stack the height of which: (1)(3) - is determined according to Table 1-10 - is at least 10 meters (m) higher than ground level - exceeds the height of the ridge of the roof by at least 3 m - is not more that twice as high as the building itself - is not greater than 250 m (NOTE: If the roof has a pitch of less than 20 °, the height of the stack is to be calculated as if it were 20 °.)
...	...
1-53. The temperature of the waste gas at the mouth of the stack must be at least 345 °K (13. BImSchV, Section 29(2)).	Verify that the temperature of the waste gas at the mouth of the stack is at least 345 °K. (1)(3) (NOTE: This requirement does not apply to furnaces in power stations, generating plants, etc., where the waste gas is discharged via a cooling tower.)
...	...
Mixed Firing and Multifuel Firings	
1-54. Emission limit values for mixed firings and multifuel firings must be calculated in certain ways (13. BImSchV, Section 31).	Verify, for mixed firings, that the emission limit values set for each fuel are determined in accordance with the ratio of the heat content of that fuel to the total quantity of heat, and that the emission limit values for the furnace are a result of the addition of the quantities that result. (1)(3) (NOTE: The emission limit values for the fuel having the highest standard are used if, during the operation of the furnace, the quantity of heat contributed by that fuel is at least 50 percent of the total quantity of heat.) Verify, for multifuel firings, that the limit values for each fuel consumed are used as a basis for determining compliance. (NOTE: When a switch is made from solid fuel to gaseous fuel, the particulate emission limit values for the solid fuel apply for a period of 4 h after the switch.)
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Particulate Emission Standards during Transport and Storage	
1-55. The competent authority is empowered to establish that certain measures must be taken during storage and transport to limit particulate emissions (13. BImSchV, Section 32(1)).	Determine whether the competent authority requires that any special measures be taken during storage and transport to limit particulate emissions. (1)(3) Verify that the installations carries out those special measures if required.
...	...
1-56. Particulate emissions that result from the emptying of filters must be limited (13. BImSchV, Section 32(2)).	Verify that particulate emissions are limited when cleaning filters either by drawing them off into closed containers or by dampening them at the point of discharge. (1)(3)
...	...
1-57. Closed systems are to be used for the intermediate storage and for the transport of ashes (13. BImSchV, Section 32(3)).	Verify that closed systems are to be used for the intermediate storage and for the transport of ashes. (1)(3)
...	...
SMALL FURNACES **General Requirements**	
1-58. Small furnaces that burn solid fuels at full load must be operated such that their waste gas plume is lighter than Shade One on the Ringelmann Scale (1. BImSchV, Section 4(1)).	Verify that small furnaces that burn solid fuels at full load are operated such that their waste gas plume is lighter than Shade One on the Ringelmann Scale. (1)(3)

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-59. Solid-fuel-burning furnaces with a nominal thermal output of 15 kilowatts (kW) or less may burn only certain fuels (1. BImSchV, Section 5(2)).	Verify that solid-fuel-burning furnaces with a nominal thermal output 15 kW or less burn fuels 1 through 4 of Table 1-11 only. (1)(3)
...	...
1-60. Small furnaces that burn solid fuels may burn only certain fuels (1. BImSchV, Section 4(2)).	Verify that small furnaces burn only those fuels that the manufacturer states are suitable for burning in small furnaces. (1)(3) Verify that the design and method of operating the furnace match the specifications of the fuel's manufacturer.
...	...
1-61. The use of open fireplaces [*offene Kamine*] is subject to restrictions (1. BImSchV, Section 4(3)).	Verify that open fireplaces are used only occasionally. (1)(3) Verify that only cut pieces of untreated wood are used in open fireplaces. (NOTE: This requirement does not apply to open fireplaces that are operated with the combustion chamber closed if their heat output occurs primarily by convection.)
...	...
Nominal Thermal Output Higher than 15 kW	(NOTE: None of the following emission limit values apply to small furnaces with a nominal thermal output of 22 kW or less if they were installed before 1 October 1988, nor do they apply to ranges or to tile stoves without heating elements.)
1-62. Solid-fuel-burning furnaces with a nominal thermal output of more than 15 kW are subject to emission limit values for particulate matter that depend on the type of fuel used (1. BImSchV, Section 6(1)).	Verify that solid-fuel-burning furnaces with a nominal thermal output of more than 15 kW do not exceed particulate emissions (1)(3) - of 0.15 g/m^3 relative to an oxygen volume of 8 percent if fuels 1-3 of Table 1-11 are burned - of 0.15 g/m^3 relative to an oxygen volume of 13 percent if fuels 4, 5, or 8 of Table 1-11 are burned - of 0.15 g/m^3 relative to an oxygen volume of 13 percent if fuels 6 or 7 of Table 1-11 are burned.
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-63. Solid-fuel-burning furnaces with a nominal thermal output of more than 15 kW are subject to emission limit values for carbon monoxide that depend on the type of fuel used (1. BImSchV, Section 6(1)).	Verify that solid-fuel-burning furnaces that burn fuels 4, 5, or 8 of Table 1-11 do not exceed carbon monoxide emissions relative to an oxygen volume of 13 percent (1)(3) - of 4 g/m^3 if the nominal thermal output is 50 kW or less - of 2 g/m^3 if the nominal thermal output is greater than 50 kW but less than or equal to 150 kW - of 1 g/m^3 if the nominal thermal output is greater than 150 kW but less than or equal to 500 kW - of 0.5 g/m^3 if the nominal thermal output is greater than 500 kW. (NOTE: Small furnaces that were built before 1 October 1988 and that have a carbon monoxide concentration in their waste gas that is greater than the above concentrations but less than double them must meet the above standards no later than 7 yr after 1 October 1988.) Verify that solid-fuel-burning furnaces that burn fuels 6 or 7 of Table 1-11 do not exceed carbon monoxide emissions relative to an oxygen volume of 13 percent - of 0.8 g/m^3 if the nominal thermal output is 100 kW or less - of 0.5 g/m^3 if the nominal thermal output is greater than 100 kW but less than or equal to 500 kW - of 0.3 g/m^3 if the nominal thermal output is greater than 500 kW. (NOTE: Small furnaces that were built before 1 October 1988 and that have a carbon monoxide concentration in their waste gas that is greater than the above concentrations but less than double them must meet the above standards no later than 7 yr after 1 October 1988.)
...	...
1-64. Hand-fired furnaces that use liquids as heat-carrying media are subject to certain operating restrictions (1. BImSchV, Section 6(2)).	Verify that hand-fired furnaces that use liquids as heat-carrying media are operated at full load when fuels 4 through 8 of Table 1-11 are used. (1)(3) Verify that a heat accumulator of adequate capacity is also used. (NOTE: This requirement does not apply to furnaces that burn fuels 4, 5, 6, 7, or 8 if the emission limit values for particulate matter and carbon dioxide can be complied with even when the furnace is operating with the air supply partially throttled.)
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
SMALL OIL OR GAS FURNACES	
1-65. Small oil or gas furnaces that were installed after 1 October 1988 or whose boilers have been exchanged must be designed in such a way that the emissions of oxides of nitrogen can be limited by state-of-the-art techniques of combustion (1. BImSchV, Section 7(1)).	Verify that small oil or gas furnaces that were installed after 1 October 1988 or whose boilers have been exchanged are designed in such a way that the emissions of oxides of nitrogen can be limited by state-of-the-art techniques of combustion (1. BImSchV, Section 7(1)). (1)(3)
...	...
1-66. Small oil furnaces with vaporizing burners are to be installed and operated in such a way that they meet certain requirements (1. BImSchV, Section 8).	Verify that small oil furnaces with vaporizing burners are installed and operated in such a way that: (1)(3) - particulate emissions in the waste gas do not exceed an opacity number of 2 - the waste gas is free of oil derivatives. (NOTE: Furnaces with a nominal thermal output no greater than 11 kW must not exceed an opacity number of 3.)
...	...
1-67. Small oil furnaces with atomizing burners are to be installed and operated in such a way that they meet certain requirements (1. BImSchV, Section 9).	Verify that small oil furnaces with vaporizing burners are installed and operated in such a way that: (1)(3) - particulate emissions in the waste gas do not exceed opacity number of 1 - the waste gas is free of oil derivatives. (NOTE: If the furnace was already installed on 1 October 1988, then an opacity number of 2 must not be exceeded even if the furnace has been substantially modified.)
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-68. Small oil and gas furnaces must meet certain requirements with regard to waste gas loss (1. BImSchV, Section 11).	Verify that small oil and gas furnaces meet the requirements listed in Table 1-12. (1)(3) (NOTE: The requirements of Table 1-12 do not apply to furnaces with a nominal thermal output of 11 kW or less that heat a single room nor to furnaces with a nominal thermal output of 28 kW or less that are used exclusively to heat nonpotable water for industrial use.) (NOTE: If oil or gas furnaces cannot comply with the requirements of Table 1-12 even if they are properly operated, then they are to be installed and operated so that whatever process or design is involved is state-of-the-art.)
...	...
1-69. The installation is required to have compliance with emission limit values verified by the competent Regional Master Chimney Sweep within four weeks after start-up (1. BImSchV, Section 14(1)).	Determine whether any of the above entries under the heading **SMALL OIL OR GAS FURNACES** have applied to the furnace in question. (1)(3) Verify that the installation has had compliance with emission limit values verified by the competent Regional Master Chimney Sweep [*Bezirksschornsteinfegermeister*] within four weeks after the start-up of a small oil or gas furnace with a nominal thermal output of more than 4 kW that is installed or substantially modified after 1 October 1988. (NOTE: This requirement does not apply to: - furnaces with a nominal thermal output of 11 kW or less if it is used exclusively to heat a single room or to heat industrial water - furnaces in which methanol, ethanol, hydrogen, biogas, sewer gas, pit gas, steel gas [*Stahlgas*], blastfurnace gas, or refinery gas are used, nor to those that burn natural gas or petroleum gas at the point at which it is obtained. - furnaces that are installed as thermal value devices, if they meet the requirements for waste gas loss set forth in Table 1-12.) (NOTE: It is the installation's responsibility to see to it that furnaces that must be checked have the proper openings through which measurements are to be taken.) (NOTE: If a furnace has multiple connectors, each connector must have its own opening through which measurements can be taken.)
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-70. The installation must have a second set of measurements taken by the Regional Master Chimney Sweep within six weeks of the first measurements if the first set of measurements taken indicate that its furnaces are not in compliance (1. BImSchV, Section 14(4)).	Determine whether the first set of measurements taken by the Regional Master Chimney Sweep indicate noncompliance with relevant standards. (1)(3) Verify that the installation has another set of measurements taken by the Regional Master Chimney Sweep within six weeks.
...	...
1-71. Certain furnaces are subject to requirements that measurements be taken periodically by the Regional Master Chimney Sweep (1. BImSchV, Section 15(1)).	Determine whether the installation operates furnaces of the following types and whether they are subject to any of the emission limit values in the above questions under the heading **SMALL OIL OR GAS FURNACES** (1)(3) - mechanically fired small furnaces with a nominal thermal output of more than 15 kW in which fuels 1 through 5, or 8 of Table 1-11 are used - small furnaces with a nominal thermal output of 50 kW or more in which fuels 6 or 7 of Table 1-11 are used - small oil or gas furnaces with a nominal thermal output of more than 11 kW. Verify that the Regional Master Chimney Sweep takes measurements at regular intervals once every calendar year for such furnaces. (NOTE: The following furnaces are exempt from the requirements of this entry: - furnaces in which methanol, ethanol, hydrogen, biogas, sewer gas, pit gas, steel gas [*Stahlgas*], blast-furnace gas, or refinery gas are used, and those that burn natural gas or petroleum gas at the point at which it is obtained. - furnaces that are installed as thermal value devices, if they meet the requirements for waste gas loss set forth in Table 1-12 - bivalent heating - gas furnaces installed before 1 January 1985 that are connected to exterior walls [*mit Aussenwandanschluss*].) (NOTE: The installation is supposed to be notified at least 6 weeks in advance of the date on which the Regional Master Chimney Sweep intends to take such measurements.)
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Germany	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-72. The installation must have a second set of measurements taken by the Regional Master Chimney Sweep within six weeks of the first measurements if the first set of measurements taken indicate that its furnaces are not in compliance (1. BImSchV, Section 15(4)).	Determine whether the first set of measurements taken by the Regional Master Chimney Sweep indicate noncompliance with relevant standards. (1)(3) Verify that the installation has another set of measurements taken by the Regional Master Chimney Sweep within six weeks.
...	...
1-73. Small furnaces with a nominal thermal output of 1 MW or more are subject to certain requirements relative to the height of the opening from which the waste gas exits (1. BImSchV, Section 18).	Verify that the opening from which the waste gas exits is: (1)(3) - at least 3 m higher than the highest edge of the roof ridge - at least 10 m above ground level. (NOTE: If the roof has a pitch of less than 20 ^{o}, the height of the opening is to be calculated as if it were 20 ^{o}.)
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
INCINERATORS	(NOTE: Only those incinerators that require a permit under BImSchG and that burn solid or liquid waste or similar solid or liquid combustibles other than those listed in Table 1-1, Chart One, Heading 1, Number 2 are subject to regulation. If the facility is used predominantly for a purpose other than burning the aforementioned materials, or if it is operated solely as a part of or as auxiliary equipment for another facility, it is also subject to regulation. Incinerators that are intended exclusively for burning the following materials are not subject to regulation: - wood or wood scraps, including plywood, chip or particle board, fiber board, or other laminated wood with coating that consist of halogenated organic compounds - straw, nutshells, or other similar materials from plants - waste liquor from process for obtaining cellulose - liquid combustible materials, if the content of polychlorinated aromatic hydrocarbons such as PCBs or PCT, is no greater than 10 mg/kilogram (kg) and the net calorific value of the combustible material is at least 30 megajoules (MJ)/kg - other liquid combustible materials, if their composition is such that they will have no emissions other or higher than those from burning EL fuel oil.) (NOTE: Existing incinerators are not subject to the following provisions until 1 December 1994. Incinerators that meet the requirements set forth in their permits as of 1 December 1990 are not subject to the above provisions until 1 December 1996. Those incinerators for which there existed on 1 December 1990 an incontestable obligation to meet the standards set forth in their permits until 1 March 1994 are also not subject to the foregoing requirements until 1 December 1996.)
Operating Requirements	
1-74. Incinerators are to be installed and operated in such a way that thorough combustion of the materials introduced to them is achieved (17. BImSchV, Section 4(1)).	Verify that incinerators are installed and operated in such a way that thorough combustion of the load is achieved. (1)(3) (NOTE: If necessary to achieve thorough combustion, the load should be pretreated by pulverizing, by mixing, or by opening single-use containers.)
...	...
1-75. The temperature of gases that result from incineration is regulated (17. BImSchV, Section 4(2)).	Verify that the temperature of the gas from the incineration of the following materials is at least 850 °C after the last time air for combustion is introduced into the incinerator: (1)(3) - household waste - material similar to household waste in terms of its composition or its character - sewage sludge - medical waste [*krankenhausspezifische Abfaelle*] - materials that contain no halogenated hydrocarbons Verify that the temperature of gases that arise from the incineration of materials other than those listed above is at least 1200 °C

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-76. The above lowest permissible temperatures must be maintained for at least two seconds at an oxygen concentration of no less than 6 percent when combining the combustion gases with the air for combustion (17. BImSchV, Section 4(2)).	Verify that the above lowest permissible temperatures are maintained for at least two seconds at an oxygen concentration of no less than 6 percent when combining the combustion gases with the air for combustion. (1)(3) (NOTE: If liquids alone are incinerated, the required oxygen concentration is 3 percent.) (NOTE: The required oxygen concentration is 3 percent for incinerators in which waste or similar combustible materials are burned that have been pretreated under conditions of oxygen deficiency when the gaseous and particulate emissions from that process are themselves incinerated, if the gaseous materials make up the greater part of the heat output.)
...	...
1-77. Incinerators are to be equipped with one or more supplementary burners that must be operated during start-up and when it appears that the lowest permissible temperatures cannot be achieved without using them (17. BImSchV, Section 4(4)).	Verify that incinerators are equipped with one or more supplementary burners. (1)(3) Verify that the supplementary burners are operated during start-up and when it appears that the lowest permissible temperatures cannot otherwise be achieved without using them. (NOTE: The supplementary burners may be operated using natural gas, liquid petroleum gas, EL fuel oil, or the following: - Wood or wood scraps, including plywood, chip or particle board, fiber board, or other laminated wood with coating that consist of halogenated organic compounds - Straw, nutshells, or other similar materials from plants - waste liquor from process for obtaining cellulose - liquid combustible materials, if the content of polychlorinated aromatic hydrocarbons such as PCBs or PCT, is no greater than 10 mg/kg and the net calorific value of the combustible material is at least 30 MJ/kg - Other liquid combustible materials, if their composition is such that they will have no emissions other or higher than those from burning EL fuel oil.) (NOTE: Coal may be used to operate supplementary burners if it appears that the lowest permissible temperatures cannot otherwise be achieved.)
...	...
1-78. Incinerators must be provided with certain automatic equipment (17. BImSchV, Section 4(5)).	Verify that automatic equipment is present that: (1)(3) - ensures that charging the incinerator is possible only after the lowest permissible temperature has been achieved after start-up - ensures that charging can continue only as long as the lowest permissible temperature is maintained - ensures that charging is interrupted if emission limit values that must be continuously monitored might be exceeded as a result of a failure or a disruption of the incinerator's waste gas cleaning equipment.
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-79. When shutting down the incinerator, the supplementary burners must be kept in operation until no more of the load is found in the combustion chamber (17. BImSchV, Section 4(7)).	Verify that, when shutting down the incinerator, the supplementary burners are kept in operation until no more of the load is found in the combustion chamber. (1)(3)
...	...
1-80. Deposits of fly ash are to be kept to an absolute minimum (17. BImSchV, Section 4(8)).	Verify that deposits of fly ash are kept to an absolute minimum. (1)(3) (NOTE: Deposits of fly ash can be kept to a minimum by the use of appropriate exhaust systems, and by cleaning boilers, heating surfaces, feed-water heaters, and exhaust channals [*Abgaszuege*] frequently.)
...	...
Delivery and Intermediate Storage of Combustibles	
1-81. Incinerators for solid materials must be equipped with bins that meet certain requirements (17. BImSchV, Section 3(1)).	Verify that incinerators for solid materials are equipped with bins that have a pressure lower than atmospheric pressure in the bin itself or in the transfer tubes. (1)(3) Verify that the air evacuated from the bin or the tubes is conducted to the incinerator itself. Verify that the evacuated air is discharged via the stack when the incinerator is not operating. (NOTE: This requirement does not apply if the material to be burned is brought to the incinerator in closed single-use or multiple-use containers.) Verify that the bins are equipped with fire detection equipment.
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-82. The storage of liquid substances awaiting incineration is subject to regulation (17. BImSchV, Section 3(5)).	Verify that liquid substances awaiting incineration are stored in closed containers that are secure against over-pressures. (1)(3) Verify that a gas displacement process is used when filling the containers. (NOTE: In lieu of the gas displacement process, it is sufficient that the air displaced by the entering liquid be captured.) Verify that open points of transfer have exhaust equipment. Verify that displaced air from containers and/or air suctioned off by the exhaust system are conducted to the incinerator. Verify that emission reduction measures (i.e., gas displacement process or waste gas cleaning equipment) are used when filling storage tanks or accepting materials at an open transfer point when the firing of the incinerator has been interrupted.

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
Emission Standards	
1-83. Incinerators are subject to emission limit values for carbon monoxide (17. BImSchV, Section 4(6)).	Verify that the installation's incinerators have a daily average value of carbon monoxide emissions of 50 mg/m^3 of waste gas or less. (1)(3) (NOTE: This limit value is relative to a percentage of oxygen of 11 percent.) Verify that the hourly average value is 100 mg/m^3 of waste gas or less. (NOTE: This limit value is relative to a percentage of oxygen of 11 percent.) Verify that at least 90 percent of the all the readings for the concentration of carbon monoxide in the waste gas taken in a 24 h period are 150 mg/m^3 of waste gas or less.
...	...
1-84. Incinerators are subject to emission limit values with respect to emissions other than carbon monoxide (17. BImSchV, Section 5).	Verify that the installation's incinerators comply with the requirements in Table 1-13. (1)(3) (NOTE: The limit values in Table 1-13 and those for carbon dioxide emissions in the previous entry also apply to facilities that require a permit under BImSchG in which solid or liquid waste or materials other than those listed immediately below are burned in addition to those substances listed in Table 1-1, Chart One, Heading 1, Number 2, if the permissible portion of waste or other combustible at the nominal thermal output of the incinerator (including any necessary supplementary combustible) does not exceed 25 percent. - wood or wood scraps, including plywood, chip or particle board, fiber board, or other laminated wood with coating that consist of halogenated organic compounds - straw, nutshells, or other similar materials from plants - waste liquor from process for obtaining cellulose - liquid combustible materials, if the content of polychlorinated aromatic hydrocarbons such as PCBs or PCT, is no greater than 10 mg/kg and the net calorific value of the combustible material is at least 30 MJ/kg. The limit values apply to only that portion of the waste gas stream that arises when incinerating the highest permissible portion of the waste, to any supplementary combustible necessary during incineration, and to any similar solid or liquid combustible materials being incinerated. If there are no specific standards for the other part of the waste gas stream, the actual emissions during operation when waste is not being burned with other combustibles are to be used.) (NOTE: The limit values in Table 1-13 and those for carbon dioxide emissions in the previous entry also apply to facilities other than those listed in Table 1-1, Chart One, Heading 1, Numbers 1 through 3 and those listed in Table 1-1, Chart One, Heading 8, Number 1, if the permissible portion of waste or other combustible at the nominal thermal output of the incinerator (including any necessary supplementary combustible) is greater than 25 percent.)

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-85. Waste gases from incinerators must be discharged via a stack that meets specific height requirements (17. BImSchV, Section 6).	Verify that the waste gases from incinerators are discharged via a stack the height of which: (1)(3) - is determined according to Table 1-10 - is at least 10 m higher than ground level - exceeds the height of the ridge of the roof by at least 3 m - is not more that twice as high as the building itself - is not greater than 250 m. (NOTE: If the roof has a pitch of less than 20 °, the height of the stack is to be calculated as if it were 20 °.)
...	...
Handling of Residues from Incinerators	
1-86. Ashes, dust from filters and boilers, reaction products, and other residues from waste gas treatment are to be avoided or reused properly and harmlessly (17. BImSchV, Section 7(1)).	Verify that ashes, dust from filters and boilers, reaction products, and other residues from waste gas treatment are avoided or reused properly and harmlessly. (1)(3) (NOTE: The organic and soluble materials in the residues should be reduced as much as possible.)
...	...
1-87. If it is technically impossible or otherwise not feasible to avoid the production of residues or to reuse them, they are to be disposed of as waste in a way that does not diminish the common good (17 BImSchV, Section 7(1)).	Verify that residues are disposed of as waste in a way that does not diminish the common good, if it is technically impossible or otherwise not feasible to avoid producing them or to reuse them. (1)(3) (NOTE: The organic and soluble materials in the residues should be reduced as much as possible.)
...	...
1-88. Dusts from filters and boilers that accumulate as a result of dedusting waste gas or as a result of cleaning boilers, heating surfaces and ***Abgaszuege*** are to be collected separate from other solid residues (17. BImSchV, Section 7(2)).	Verify that dusts from filters and boilers that accumulate as a result of dedusting waste gas or as a result of cleaning boilers, heating surfaces, and ***Abgaszuege*** are collected separate from other solid residues. (1)(3) (NOTE: This requirement does not apply to fluidized bed incinerators.)
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-89. Transfer and storage systems for dusty residues that contain harmful substances are to be designed and operated in such a way that they give off no relevant diffuse emissions (17. BImSchV, Section 7(4)).	Verify that transfer and storage systems for dusty residues that contain harmful substances are designed and operated in such a way that they give of no relevant diffuse emissions. (1)(3) (NOTE: The term 'relevant diffuse emissions' is not defined in the regulation.) (NOTE: Particular attention should be paid to limiting relevant diffuse emissions in the course of necessary maintenance and repair work on equipment that is subject to wear and tear.)
...	...
1-90. Dry dust from filters and boilers, the reaction products from waste gas treatment, and dry ash are to be transferred and stored in closed containers (17. BImSchV, Section 7(4)).	Verify that dry dust from filters and boilers, the reaction products from waste gas treatment, and dry ash are transferred and stored in closed containers. (1)(3)
...	...
1-91. The heat that is generated in the course of operating certain incinerators is to be managed in certain ways if technically possible and feasible given the kind and location of the incinerator, and if it can be done in a fashion consistent with the requirements of BImSchG, Section 5 (see checklist item 1-7)(17. BImSchV, Section 8).	Verify that the installation either transfers the heat that arises in the course of the operation of the following incinerators to third parties or uses that energy itself: (1)(3) - Incinerators that burn solid or liquid waste or similar solid or liquid combustibles other than those listed in Table 1-1, Chart One, Heading 1, Number 2, if the facility also requires a permit under BImSchG - Incinerators that are used predominantly for a purpose other than burning the aforementioned materials - Incinerators that are operated solely as a part of or as auxiliary equipment for another facility.
...	...
1-92. Electrical energy is to be produced using heat that is not transferred to third parties or used by the installation itself, if terminal power [*Klemmenleistung*] of more than 0.5 MW can be produced (17. BImSchV, Section 8)).	Determine whether terminal power [*Klemmenleistung*] of more than 0.5 MW can be produced. (1)(3) Verify that electrical energy is produced using heat that is not transferred to third parties or used by the installation itself.
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Measurements and Supervision	
1-93. Suitable locations at which to take measurements are to be provided on incinerators (17. BImSchV, Section 9).	Verify that incinerators have locations where measurements can be taken that are sufficiently large, easily accessible, and designed and selected in such a way that representative and accurate measurements can be taken. (1)(3)
...	...
1-94. Incinerators are required to have measuring equipment that tracks certain data continuously (17. BImSchV, Section 11(1)).	Verify that the installation's incinerators have equipment that continuously measures, records, and evaluates the following data: (1)(3) - concentrations by weight for substances listed in Table 1-13 Chart One and for carbon monoxide emissions - the volume of oxygen in the waste gas - the lowest permissible firing temperatures - the temperature, volume, and humidity of the waste gas. (NOTE: The requirement does not apply if there are no emissions (or only very small emissions) of particulates, organic substances, gaseous inorganic chlorine compounds, gaseous inorganic fluorine compounds, sulfur di- or trioxide, nitrogen monoxide, or nitrogen dioxide.) (NOTE: If the nature of the material being incinerated, the design of the incinerator, the method of operating it, or individual measurements demonstrate that the amount of nitrogen dioxide in the emissions of oxides of nitrogen is under 10 percent, its contribution to total emissions may be estimated.) (NOTE: It is not necessary to have equipment that measures the humidity of the waste gas if the waste gas is dried before measuring the concentration by weight of emissions.) (NOTE: No equipment for measuring gaseous inorganic flourine compounds is necessary if a step-wise process for removing those compounds ensures that the relevant emission limit values are observed.)
...	...
1-95. Incinerators must be equipped with devices that record when the locking mechanism is used and when charging is stopped (17 BImSchV, Section 11(4)).	Verify that incinerators are equipped with devices that record when the locking mechanism is used and when charging is stopped because: - the lowest permissible temperature could not be achieved after start-up - the lowest permissible temperature could not be maintained - the emission limit values that must be continuously monitored might be exceeded as a result of a failure or a disruption of the incinerator's waste gas cleaning equipment.
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-96. Each incinerator must have a certificate from the highest state authority competent for instrument calibration that attests to the proper installation of equipment that is required for taking continuous measurements (17. BImSchV, Section 10(2)).	Verify that each incinerator has a certificate from the highest state authority competent for instrument calibration that attests to the proper installation of equipment that is required for taking continuous measurements. (1)(3)
...	...
1-97. Measuring devices that are used for taking required continuous measurements must be calibrated and inspected for functionality by the agency announced by the highest state authority competent for instrument calibration (17. BImSchV, Section 10(3)).	Verify that measuring devices used for taking required continuous measurements are inspected annually for functionality. (1)(3) Verify that measuring devices used to take required continuous measurements are calibrated after significant modification to the incinerator, or otherwise at 3 yr intervals. Verify that reports on the results of calibration and on inspections for functionality are presented to the competent authority within 8 weeks. (NOTE: It is not clear whether the presentation of the results is the installation's responsibility or that of the agency doing the calibrating or inspecting.)
...	...
1-98. Reports on the evaluation of required continuous measurements are subject to regulatory requirements (17. BImSchV, Section 12(2)).	Verify that reports on the evaluation of required continuous measurements are submitted to the competent authority no later than 3 mo after the end of each calendar year. (1)(3) (NOTE: This requirement does not apply if the competent authority requires that the results of the measurements be submitted by telemetry.) Verify that the report contains information on the frequency and duration of noncompliance with requirements related to lowest permissible temperatures, if such noncompliance has occurred. Verify that the recorded results of the measurements that are the basis for the reports are kept for 5 yr.
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-99. After construction of an incinerator or significant modification to one, compliance with the requirements related to lowest permissible temperatures must be assessed by an appropriate agency (17. BImSchV, Section 13(1)).	Verify that the installation has compliance with requirements related to lowest permissible temperatures assessed by an appropriate agency after construction of an incinerator or significant modification to one. (1)(3)
...	...
1-100. After construction of an incinerator or significant modification to one, compliance with certain emission limit values must be assessed by an appropriate agency (17. BImSchV, Section 13(2)).	Verify that the installation has compliance with the emission limit values for the materials listed in Charts Two and Three of Table 1-13 assessed by an appropriate agency after construction of an incinerator or significant modification to one. (1)(3) Verify that the installation has compliance with the emission limit values listed in Chart One of Table 1-13 assessed by an appropriate agency after construction of or significant modification to an incinerator, if a step-wise process for removing gaseous inorganic flourine compounds ensures that the relevant emission limit values are observed. (NOTE: The assessment is to take place after normal operation has begun, but no earlier than 3 mo after start-up nor later than 6 mo thereafter.)
...	...
1-101. The installation must have compliance with emission limit values reassessed yearly on at least three days (17. BImSchV, Section 13(2).	Verify that the installation has compliance with emission limit values reassessed yearly on at least three days. (1)(3) (NOTE: The incinerator should be operated during the tests at the highest capacit "or which it has been permitted given whatever material is being burned during the test.)
...	...
1-102. A report is to be made to the competent authority on the results of measurements taken to assess compliance with emission limit values (17. BImSchV, Section 14(1)).	Verify that a report is made to the competent authority on the results of measurements taken to assess compliance with emission limit values. (1)(3) Verify that the report contains information on the following: - schedule of tests - results of each individual measurement - process used for taking measurements - operating conditions that it is important to know in order to evaluate the report.
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-103. If the composition of the materials to be incinerated or other knowledge (such as actual readings) gives cause to believe that emissions could exceed 60 percent of the values listed in Chart 2 of Table 1-13, the installation must take readings and document those readings weekly (17. BImSchV, Section 15(1).	Verify that the installation takes readings and documents them weekly if the composition of the materials to be incinerated or other knowledge (such as actual readings) gives cause to believe that emissions could exceed 60 percent of the values listed in Chart 2 of Table 1-13. (1)(3) (NOTE: Readings need not be taken if other tests (such as checks on the functionality of waste gas cleaning equipment) can establish with sufficient certainty that the emission limits are not being exceeded.)
...	...
1-104. The installation must take action if measurements show that operating requirements or limits on emissions are not being observed (17. BImSchV, Section 16(1)).	Verify that the competent authority is informed immediately if measurements show that operating requirements or limits on emissions are not being observed. (1)(3) Verify that the necessary steps are taken to ensure that operating requirements are complied with and emission limits observed. (NOTE: The competent authority may shut the facility down in the event that the installation does not live up to its legal obligations.)
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
EXISTING INCINERATORS	(NOTE: Existing incinerators are not subject to the foregoing provisions until 1 December 1994. Incinerators that meet the requirements set forth in their permits as of 1 December 1990 are not subject to the above provisions until 1 December 1996. Those incinerators for which there existed on 1 December 1990 an incontestable obligation to meet the standards set forth in their permits until 1 March 1994 are also not subject to the foregoing requirements until 1 December 1996.) (NOTE: If an existing incinerator is modified by the addition of new incinerators such that the existing and the newly constructed ones form a common facility, the requirements of this section apply to the existing part, and the requirements of the preceding section apply to the newly constructed part.)
1-105. The emission by existing incinerators of gaseous inorganic chlorine compounds is subject to specific restrictions (17. BImSchV, Section 17(4)).	Verify that concentrations by weight of more than 4 g/m^3 of waste gas of gaseous inorganic chlorine compounds (given as hydrogen chloride) are avoided as far as possible prior to the first stage of cleaning. (1)(3) (NOTE: This can be accomplished by simultaneous incineration of materials that contain no chlorine or only small amounts of it.) (NOTE: If an existing incinerator exceeds a daily average value of more than 4 g/m^3 of waste gas prior to the first stage of cleaning, the standards relevant to gaseous inorganic chlorine compounds in Table 1-13, Chart One do not apply.) Verify that the ratio of the weight of gaseous inorganic chlorine compounds emitted in the waste gas to the weight of gaseous inorganic chlorine compounds prior to the first stage of cleaning does not exceed a daily average of 0.25 percent. Verify that the daily average of gaseous inorganic chlorine compounds (given as hydrogen chloride) does not exceed 65 mg/m^3 of waste gas. Verify that waste gas cleaning equipment is run constantly at its highest capacity when operating the inciperator in such a way as to avoid concentrations of more than 4 g/m^3 prior to the first stage of waste gas cleaning. (NOTE: The competent authority is empowered to require that certain operating statistics be kept; 17. BImSchV, however, does not itself specify which. It does mandate that such statistics be submitted to the competent authority annually within three mo of the end of the preceding calendar year.)
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
INCINERATORS **Public's Right to Know** **1-106.** Installations are required to inform the public of the results of evaluations of the measurements of its incinerators' emissions and of the conditions that obtain in the course of incineration under certain circumstances (17. BImSchV, Section 18).	Verify that the installation informs the public annually in the manner and form established by the competent authority of the results of evalualtions of its incinerators' emissions if it is subject to requirements to have emissions measured continually. (1)(3)
...	...
SURFACE TREATMENT FACILITIES **1-107.** Facilities that use halogenated solvents to treat the surfaces of objects or materials made of metal, glass, ceramics, plastic, or rubber so as to clean, lubricate, degrease, apply emulsion to, strip, bonderize, dry, or treat those surfaces in a similar fashion are subject to the requirements in Questions 1-108 through 1-122 if the solvents used contain 1 percent or more by weight of highly volatile halogenated hydrocarbons and if the facilities are NOT listed in Table 1-1 (2. BImSchV, Section 1(2)).	Determine whether the installation has facilities that use halogenated solvents to treat the surfaces of objects or materials made of metal, glass, ceramics, plastic, or rubber so as to clean, lubricate, degrease, apply emulsion to, strip, bonderize, dry, or treat those surfaces in a similar fashion. (1)(3) Determine whether the solvents used contain 1 percent or more by weight of highly volatile halogenated hydrocarbons. Determine whether the facilities are listed in Table 1-1 or not. Verify that the facilities comply with the requirements in checklist items 1-108 through 1-122.
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-108. Only commercially pure forms of tetrachloroethylene, trichloroethylene, and dichloromethane may be used in such facilities, and no carcinogenic additives may be found in them (2. BImSchV, Section 2(1)).	Verify that only commercially pure forms of tetrachloroethylene, trichloroethylene, and dichloromethane are used in such facilities, and that no carcinogenic additives are found in them. (1)(3)

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-109. Existing surface treatment facilities without equipment that suctions off waste gases or with equipment that allows a mass flow rate of less than 0.3 kg of highly volatile halogenated hydrocarbons in the waste gas stream per hour are to be operated so that the possibilities for reducing the emissions in the treatment area [Aufstellungsraum] are exploited by enclosing and sealing the facility and modifying the treatment process (2. BImSchV, Section 7(1)).	Verify that existing surface treatment facilities that do not have equipment that suctions off waste gases or that have such equipment which allows a mass flow rate of less than 0.3 kg of highly volatile halogenated hydrocarbons in the waste gas stream per hour are operated in such a way that the possibilities for reducing the emissions in the treatment area [Aufstellungsraum] are exploited by enclosing and sealing the facility and modifying the treatment process. (1)(3)
...	...
1-110. Existing surface treatment facilities that have equipment that suctions off waste gases which allows a mass flow rate of more than 0.3 kg of highly volatile halogenated hydrocarbons per hour must direct the waste gases through a separator so that certain values are not exceeded (2. BImSchV, Section 7(2)).	Verify that existing surface treatment facilities that have equipment that suctions off waste gases which allows a mass flow rate of more than 0.3 kg of highly volatile halogenated hydrocarbons per hour direct the waste gases through a separator so that the following concentrations (by weight) of highly volatile halogenated hydrocarbons are not exceeded: (1)(3) - 200 mg/m^3 when the volume flow of waste gas runs up to 500 m^3/h - 100 mg m^3 when the volume flow of waste gas is over 500 m^3/h. (NOTE: The measurements refer to the volume of waste gas under standard conditions (273 °K (0 °C), 1013 mbar). (NOTE: If the solvent contains halogenated hydrocarbons that consist of more than 50 percent dichloromethane or chlorofluorocarbons, the emissions may not exceed a concentration by weight of 150 mg/m^3.)
...	...
1-111. Both new and existing facilities must have compliance with the above standards certified by the competent authority annually, unless continuous monitoring equipment that records its results is in use (2. BImSchV, Section 12(3)).	Verify that the competent authority certifies compliance with the above standards annually, or that the continuous monitoring equipment is tested and calibrated annually and the results of the tests and calibrations are kept for 3 yr. (1)(3)
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-112. Reports on compliance must contain information on the condition of the facility, its operating methods, the results of individual measurements and the process used to take them. The reports must be given to the competent authority within four weeks, and copies must be kept onsite for 3 yr (2. BImSchV, Section 12(6)).	Verify that reports on compliance contain information on the condition of the facility, its operating methods, the results of individual measurements and the process used to take them. (1)(3) Verify that the reports are given to the competent authority within four weeks. Verify that copies are kept onsite for 3 yr.
...	...
1-113. New facilities are to be operated so that certain standards are met, and the operator must inform the competent authority that the standards are being met no earlier than three mo nor later than six mo after start up (2. BImSchV, Section 3(1)), Section 12(1)).	Verify that the material to be treated is treated in a cabinet that is completely closed until the point that the waste gas is suctioned off. (1)(3) Verify that the possibilities for limiting emissions by sealing, separation, and modifying the treatment process are exploited as much as possible, given the state of the art. Verify that the concentration (by weight) of highly volatile halogenated hydrocarbons in the air of the area from which the treated material is removed from the cabinet does not exceed 1 g/m^3. Verify that there is an automatic closure that ensures that the treated material can be removed from the removal area only after a concentration of 1 g/m^3 is shown by a monitoring device to be no longer exceeded. (NOTE: If the gas in the removal area is suctioned off, the above standards apply to the gas that exits the removal area.) (NOTE: If the above requirements cannot be met because of the bulkiness or awkward shape of the material to be treated, the possibilities for limiting emissions by means of enclosing, sealing, separators, airlocks, and suction are to be exploited to the extent possible given the state of the art.) (NOTE: If stripping facilities [Anlagen zum Entlacken] cannot meet the above requirements regarding concentration and automatic closure devices, they are to be designed and operated such that - the air in the removal area is suctioned off when the treated material is removed, - no liquid solvent is carried out with the material in the process of removing it, and - that the treatment area is closed and its air suctioned off as much as possible given the state of the art even when the material is treated by hand.)
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-114. Waste gases that are suctioned off must be passed through a separator, and certain other requirements must be met (2. *BImSchV, Section* 3(2)).	Verify that waste gases that are suctioned off are passed through a separator. (1)(3) Verify that the concentration (by weight) of highly volatile halogenated hydrocarbons in the emissions does not exceed 20 mg/m. Verify that the separated highly volatile halogenated hydrocarbons are reclaimed. (NOTE: If the solvent contains halogenated hydrocarbons that consist of more than 50 percent dichloromethane, the emissions may not exceed a concentration by weight of 50 mg/m^3.)
...	...
1-115. Certain equipment must be found downstream of the separators for surface treatment facilities that have a waste gas flow volume of more than 500 m^3/h (2. BImSchV, Section 3(2)).	Verify that either continuous monitoring equipment that records the concentration (by weight) of highly volatile halogenated hydrocarbons in the waste gas or equipment that registers an increase of more than 1 g in the concentration and automatically shuts off the separator is found down stream of separators for surface treatment facilities that have a waste gas flow volume of more than 500 m^3/h. (1)(3)
...	...
1-116. Both new and existing facilities must have openings for taking measurements that can be tightly closed, and it must be possible to take such measurements efficiently and safely (2. BImSchV, Section 10).	Verify that both new and existing facilities have openings for taking measurements that can be tightly closed, and that such measurements can be taken efficiently and safely. (1)(3)
...	...
1-117. The operator of a facility is subject to certain recordkeeping requirements (2. BImSchV, Section 11(1)).	Verify that records are kept on: (1)(3) - the amount of highly volatile halogenated hydrocarbons brought to the facility - the amount of solvents or materials containing solvents that is handed over for reconditioning or disposal - operating hours of equipment - maintenance measures. Verify that the records are kept onsite for 3 yr. Verify that the operating hours of equipment are automatically recorded.
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-118. Operators of facilities with separators are subject to certain requirements (2. BImSchV, Section 11(2)).	Verify that the separator is tested every workday to see that it works and that the results of the test are noted in writing, if a continuous monitoring device that records results of such tests automatically is not in use. (1)(3) Verify that the records of such tests are kept for 3 yr.
...	...
1-119. Owners of facilities are subject to certain supervisory requirements (2. BImSchV, Section 12 (1), (2)).	Verify that the owner of a new facility informs the competent authority of its existence before the start of operation, and that the owners of existing facilities inform the competent authority of the existence of their facilities. (1)(3)
...	...
1-120. For facilities that employ continuous monitoring equipment that records its results, compliance is considered to have been achieved if 95 percent of all half hourly average values do not exceed the established limits and if no reading is in excess of the standard by more than a factor of three (2. BImSchV, Section 12(8)).	Verify that 95 percent of all half-hourly average values do not exceed the established limits and no reading is in excess of the standard by more than a factor of three. (1)(3)
...	...
1-121. Filling facilities with solvents or auxiliary substances and removing used solvents is to be accomplished in a way that meets certain standards (2. BImSchV, Section 13).	Verify that emissions of highly volatile halogenated hydrocarbons are kept to a minimum, given the state of the art, by suctioning off compressed waste gases that contain solvents and transferring them to a separator or exchanging them via a gas displacement process. (1)(3) Verify that residues that contain highly volatile halogenated hydrocarbons are removed from the facilities by closed devices only. Verify that highly volatile halogenated hydrocarbons and/or residues that contain them are stored, transported, and handled in closed containers only.
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-122. Waste gases that are suctioned off are to be removed via a gas line that is impermeable to highly halogenated hydrocarbons in such a way that removal via free air currents is assured (2. BImSchV, Section 14).	Verify that waste gases that are suctioned off are removed via a gas line that is impermeable to highly halogenated hydrocarbons in such a way that removal via free air currents is assured. (1)(3)
...	...
DRY-CLEANING FACILITIES	
1-123. Dry-cleaning facilities are subject to certain requirements if the cleaning agents used in them contain 1 percent or more by weight of highly volatile halogenated hydrocarbons and *if the facilities* are NOT listed in Table 1-1 (2. BImSchV, Section 1(2)).	Determine whether the installation has dry-cleaning facilities that use cleaning agents that contain 1 percent or more by weight of highly volatile halogenated hydrocarbons. (1)(3) Determine whether those facilities are listed in Table 1-1 or not. Verify that the dry-cleaning facilities comply with the requirements in Questions 1-124 through 1-130.
...	...
1-124. Only commercially pure forms of tetrachloroethylene, trichloroethylene, and dichloromethane may be used in such dry-cleaning facilities, and no carcinogenic additives may be found in those solvents (2. BImSchV, Section 2(1)).	Verify that only commercially pure forms of tetrachloroethylene, trichloroethylene, and dichloromethane are used in such dry-cleaning facilities, and that no carcinogenic additives are found in those solvents. (1)(3)
...	...
1-125. Trichloroethylene and dichloromethane may not be used in dry-cleaning facilities (2. BImSchV, Section 2(1)).	Verify that no trichloroethane and no dichloromethane are being used in dry-cleaning facilities on the installation. (1)(3)
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-126. Dry-cleaning facilities must meet certain requirements (2. BImSchV, Section 4(1)).	Verify that the concentration by weight of highly volatile halogenated hydrocarbons in the air leaving the drum does not exceed 2 g/m^3 under the following conditions: (1)(3) - the drum is still rotating - the loading door is closed - ventilation is still running - the material being treated has reached a temperature not less than 308 ^{o}K (35 ^{o}C) - the rate of air exchange falls between 2 and 5 m^3/kg of load per hour. (NOTE: If the rate of air exchange exceeds 5 m^3/kg of load per hour, the figure is to be calculated at the 5 m^3 rate.) Verify that the loading door locks automatically at the beginning of the treatment process and remains locked until the concentration by weight of highly volatile halogenated hydrocarbons in the air leaving the drum no longer exceeds 2 g/m^3 under the above conditions. (1)(3) Verify that waste gases that are suctioned off from dry-cleaning facilities are conducted to a separator. Verify that neither fresh air nor air from the space in which it is located is used to desorb the separator. Verify that the emissions of highly volatile halogenated hydrocarbons in undiluted waste gas leaving the separator does not exceed a concentration by weight of 20 mg/m^3 relative to the volume of waste gas under standard conditions. Verify that the separated highly volatile halogenated hydrocarbons are being reclaimed. Verify that regeneratable filters only are used for purifying liquid solvent.
...	...
1-127. Separators downstream of dry-cleaning facilities with a waste gas stream of more than 500 m^3/h must meet certain requirements (2. BImSchV, Section 4(2)).	Verify that one of the following types of equipment is used to measure the concentration by weight of highly volatile halogenated hydrocarbons in the waste gas: (1)(3) - continuous measuring equipment that records its results - equipment that measures an increase of more than 1 g/m^3 and shuts down the dry-cleaning equipment connected to the separator automatically if such an increase is registered.
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-128. The rooms in which dry-cleaning equipment is operated must meet certain standards for ventilation (2.BImSchV, Section 4(4)).	Verify that ventilation occurs such that the highly volatile halogenated hydrocarbons that are emitted in the following areas are captured at the point of emission and suctioned off: (1)(3) - areas where the dry-cleaning machines operate - areas where highly volatile halogenated hydrocarbons are stored - areas where the material that has been cleaned is stored - areas where mangles are operated - areas where steamers are located - areas where machines are unloaded.
...	...
1-129. No highly volatile halogenated hydrocarbons other than those used in the dry-cleaning machines may be used in rooms where dry-cleaning machines are operated (2. BImSchV, Section 4(5)).	Verify that no highly volatile halogenated hydrocarbons other than those used in the dry-cleaning machines are used in rooms where dry-cleaning machines are operated. (1)(3)
...	...
1-130. *Dry-cleaning* equipment (including self-service equipment) may be used only in the presence of technically qualified personnel (2. BImSchV, Section 4(6)).	*Verify that no dry-cleaning* equipment (including self-service equipment) is used only in the presence of technically qualified personnel. (1)(3)
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
OZONE-DEPLETING HALOGENATED HYDROCARBONS	
1-131. The use of coolants that contain more than 1 percent by weight of ozone-depleting halogenated hydrocarbons and/or (partially halogenated) chlorodifluoromethane is prohibited (FCKW-Halon-Verbots-Verordnung, Section 3.)	Verify that no coolants that contain more than 1 percent by weight of ozone-depleting halogenated hydrocarbons and/or (partially halogenated) chlorodifluoromethane are in use on the installation. (1)(3)(6)(10) (NOTE: Coolants for use in products that were made before 1 August 1991 may be used until those products are taken out of service unless coolants with a smaller potential for depleting the ozone layer are available for use in those products. (NOTE: This prohibition does not apply to mobile cooling units that contain more than 5 kg of such coolants in closed systems until 1 January 1994, and it does not apply to mobile cooling units that contain less than 5 kg of such coolants in closed systems until 1 January 1995.)
...	...
1-132. The use of cleaning agents and solvents that contain a total of more than 1 percent by weight of ozone-depleting halogenated hydrocarbons and/or (partially halogenated) chlorodifluoromethane is prohibited (FCKW-Halon-Verbots-Verordnung, Section 5).	Verify that cleaning agents and solvents that contain a total of more than 1 percent by weight of ozone-depleting halogenated hydrocarbons and/or (partially halogenated) chlorodifluoromethane are not in use on the installation. (1)(3)(6)(8)(9)(10) (NOTE: This prohibition does not apply to cleaning agents and solvents used in facilities that must comply with the provisions in the sections headed HALOGENATED HYDROCARBONS above, if those cleaning agents and solvents are used in those facilities only.) (NOTE: The prohibition on the use of carbon tetrachloride does not apply when it is used as a solvent in chlorination processes that take place in closed systems if no other less dangerous substances, preparations, or products are substitutable for it.)
...	...
1-133. The use of extinguishing agents that contain more than 1 percent by weight of bromochlorodifluoromethane, bromotrifluoromethane, or dibromotetrafluoro-ethane is prohibited (FCKW-Halon-Verbots-Verordnung, Section 6).	Verify that extinguishing agents that contain more than 1 percent by weight of bromochlorodifluoromethane, bromotrifluoromethane, or dibromotetrafluoroethane are not in use on the installation. (1)(3)(6)(8)(9)(10) (NOTE: Extinguishing agents that are contained in firefighting equipment may be used until 31 December 1993, if they were produced before 1 August 1991.)
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-134. The release of certain coolants or extinguishing agents in the course of operating, maintaining, or taking out of service the products which contain them is prohibited, unless it is unavoidable given the state of the art (FCKW-Halon-Verbots-Verordnung, Section 8(1)).	Verify that no coolants that contain ozone-depleting halogenated hydrocarbons and/or (partially halogenated) chlorodifluoromethane, and no extinguishing agents that contain more than 1 percent by weight of bromochlorodifluoromethane, bromotrifluoromethane, or dibromotetrafluoroethane, are released into the atmosphere when the products that contain them are being operated, maintained, or taken out of service, unless the release is unavoidable given the state of the art. (1)(3)(6)(8)(9)(10)
...	...
1-135. Only persons who have the necessary expertise and the appropriate tools are permitted to maintain or take out of service products that contain certain coolants or extinguishing agents (FCKW-Halon-Verbots-Verordnung, Section 8(3)).	Verify that only persons who have the necessary expertise and the appropriate tools maintain products that contain coolants that contain ozone-depleting halogenated hydrocarbons and/or (partially halogenated) chlorodifluoromethane, or extinguishing agents that contain more than 1 percent by weight of bromochlorodifluoromethane, bromotrifluoromethane, or dibromotetrafluoroethane, or take them out of service. (1)(3)(6)(8)(9)(10)
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
TRANSFER AND STORAGE OF GASOLINE	(NOTE: This section of the *Air Emissions Management* Protocol applies only to permanent and mobile equipment that is filled with gasoline or from which gasoline is drawn if those facilities do NOT require a permit under BImSchG.)
General Requirements	
1-136. Facilities from which gasoline fumes are displaced when being filled are to be installed and operated in such a way that the displaced gasoline fumes are captured by a state-of-the-art gas displacement system and conducted back the to source from which they came (20. BImSch, Section 3(1)).	Verify that facilities from which gasoline fumes are displaced while they are being filled are installed and operated in such a way that the displaced gasoline fumes are captured by a state-of-the-art gas displacement system and conducted back to the source from which they came. (1)(3) (NOTE: Gas displacement systems are considered to be state-of-the-art if: - the flow of fuel is allowed to commence only if the gas displacement system is connected - the gas displacement system and attached equipment allow no fumes to be released into the atmosphere when properly operated (with the exception of releases that are necessary for safety reasons).) (NOTE: This requirement does not apply if a permanent facility has a capacity of less than 1 m^3 or if the amount of gasoline dispensed in a year does not exceed 100 m^3.) (NOTE: Facilities built before 10 October 1992 must comply with this requirement within 2 yr of that date.)
...	...
Facilities with Gas Displacement Systems	
1-137. Gas displacement systems are subject to inspection and maintenance requirements (20. BImSchV, Section 6).	Verify that the gas displacement system is inspected for functionality at least once a year by an expert firm [*Fachbetrieb*]. (1)(3)(4)(5)(10) Verify that deficiencies noted in the course of inspection are corrected immediately. Verify that written records of the results of the inspection and corrective measures taken are kept onsite for 3 yr.
...	...
1-138. Experts must establish the good condition of gas displacement systems before they start operating (20. BImSchV, Section 7(2)).	Verify that experts have established the good condition of gas displacement systems prior to their being put into service. (1)(3)(4)(5)(10) Verify that deficiencies are corrected by an expert firm prior to putting the system into service.
...	...

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COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-139. A report on the good condition of the gas displacement system must be produced (20. BImSchV, Section 7(3)).	Verify that a report is produced on the good condition of the gas displacement system and that it is kept onsite for 3 yr. (1)(3)(4)(5)(10) Verify that a copy of the report on permanent facilities is sent to the competent authority within 4 weeks of the inspection. (NOTE: Although reports must be written on mobile equipment, they need be shown to the competent authority on demand only.)
...	...
Facilities without Gas Displacement Systems	
1-140. Certain requirements apply if a gas displacement system cannot be put into service (20. BImSchV, Section 3(2), Section 5, Section 6).	Determine whether a gas displacement system cannot be put into service for one of the following reasons: (1)(3)(4)(5)(10) - filling is taking place from a tank with a floating top - there is supposed to be an atmosphere of inert gas between the roof and the cover in a fixed-roof tank with a floating top. Verify that the facility is set up and operated in such a way that the displaced gasoline fumes are captured and conducted to the waste gas cleaning equipment of the permanent facility. (NOTE: This requirement does not apply if another state-of-the-art method ensures that emissions are reduced to an equal degree.) (NOTE: This requirement does not apply if a permanent facility has a capacity of less than 1 m^3 or if the amount of gasoline dispensed in a year does not exceed 100 m^3.) Verify that the waste gas cleaning equipment achieves a degree of pollution abatement of not less than 97 percent. Verify that measuring ports that can be tightly closed are provided so that the degree of pollution abatement can be measured. Verify that the degree of pollution abatement is measured by an expert firm [*Fachbetrieb*] at least once every 6 mo. Verify that the results of measurements of the degree of pollution abatement are kept onsite for 3 yr. Verify, if a separator is used as the waste gas cleaning equipment, that the separated gasoline fumes are reclaimed. Verify that the waste gases from the waste gas cleaning equipment are conducted away by an exhaust pipe such that they are removed by a free flow of air.
...	...

(1) BCE (Base Civil Engineering/Environmental Planning) (2) BEE (Bioenvironmental Engineering) (3) Air Pollution Source Operator (4) Fuels - Management Branch (5) Transportation - Maintenance Branch (6) LGS (Base Supply) (7) MWR (Morale, Welfare, and Recreation) Auto Hobby Shop (8) Refrigeration Shops (BCE) (9) Equipment Maintenance Squadron (10) AAFES (Army/Air Force Exchange Service) Gas Station

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-141. Facilities with waste gas cleaning equipment instead of gas displacement systems must have compliance with the above standards certified by an appropriate agency no earlier than 3 mo nor later than 6 after start-up and at intervals of 3 yr thereafter (20. BImSchV, Section 7(3)).	Verify that facilities with waste gas cleaning equipment instead of gas displacement systems have compliance with the above emission standards certified by an appropriate agency no earlier than 3 mo nor later than 6 after start-up and at intervals of 3 yr thereafter. (1)(3)(4)(5)(10) (NOTE: The degree of pollution abatement is to be determined on the basis of at least three individual measurements of the content of hydrocarbons in the waste gas before and after cleaning. The requirements are considered to have been met if the average of the individual measurements does not exceed the prescribed value.)
...	...
GAS STATIONS FOR AUTOMOBILES	(NOTE: This section of the *Air Emissions Management* protocol applies to the design, construction, and operation of gas stations where the gas tanks of automobiles are filled with gasoline if those gas stations do NOT require a permit under the BImSchG.)
1-142. Gas stations are to be constructed and operated such that the gasoline fumes that escape from the gas tanks in the course of filling automobiles with gasoline are captured by a state-of-the-art gas recycling system and returned to the storage tank (21. BImSchV, Section 3(1)).	Verify that gas stations are constructed and operated such that the gasoline fumes that escape from the gas tanks in the course of filling automobiles with gasoline are captured by a state-of-the-art gas recycling system and returned to the storage tank. (1)(3)(4)(5)(10) (NOTE: This requirement does not apply to gas stations that already existed on 1 January 1993 if they dispense no more than 1000 m^3 of gasoline per year; it also does not apply to the filling of cars that cannot be filled using a gas recycling system.) (NOTE: Compliance with this requirement must be achieved on the following schedule: - within 3 yr of 1 January 1993 by gas stations that dispense more than 5000 m^3 of gasoline per year - within 3 yr of 1 January 1993 by gas stations that dispense 2500 or more but less than 5000 m^3 of gasoline per year if the gas stations are found within an area subject to special investigation that has been set up by the state under the terms of the BImSchG - within 3 yr of 1 January 1993 by gas stations that dispense 2500 or more but less than 5000 m^3 of gasoline per year if the gas stations are NOT found within an area subject to special investigation that has been set up by the state under the terms of the BImSchG - within 5 yr of 1 January 1993 by gas stations that dispense more than 1000 m^3 but less than 2500 m^3 of gasoline per year.) (NOTE: The above time-limits do not apply to gas stations where, for more than half of the pumps, the connections to the storage tanks are being modified or where the capacity of the storage tanks is being changed. In those instances, the requirements are to be met by the gas station as a whole in relation to the modifications.)

(1) BCE (Base Civil Engineering/Environmental Planning) (2) BEE (Bioenvironmental Engineering) (3) Air Pollution Source Operator (4) Fuels - Management Branch (5) Transportation - Maintenance Branch (6) LGS (Base Supply) (7) MWR (Morale, Welfare, and Recreation) Auto Hobby Shop (8) Refrigeration Shops (BCE) (9) Equipment Maintenance Squadron (10) AAFES (Army/Air Force Exchange Service) Gas Station

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-142. (continued)	(NOTE: Gas recycling systems without vacuum assist are considered state-of-the-art if - only those fill nozzles are used whereby a tight seal between the nozzle and the car's tank can be achieved, if the car's tank is appropriate for gas recycling systems - the free passage of gasoline in the gas recycling system is guaranteed at a sufficiently low flow resistance - the back pressure at the fill nozzle does not exceed the manufacturer's specifications - the lines leading back from the gas pump to the storage tank have a constant gradient of at least 1 percent - the sealing sleeves on the fill nozzles have no tears, holes, or other defects that could lead to leaks.) (NOTE: Gas recycling systems that have vacuum assist are considered state-of-the-art if the volumetric ratio of returned gasoline fumes/air mixture to the fuel that goes into the tank does not exceed 105 percent.)
...	...
GAS STATIONS **Supervision, Notification, etc.**	
1-143. Gas recycling systems must be checked at least once a year by an expert firm to see that they are functioning properly (21. BImSchV, Section 5(1)).	Verify that gas recycling systems are checked at least once a year by an expert firm to see that they are functioning properly. (1)(3)(4)(5)(10) Verify that any deficiencies noted in the course of the inspection are corrected immediately. Verify that the results of the inspection and records of any measures that need to be taken to correct deficiencies are kept onsite for 3 yr.
...	...
1-144. Compliance with the requirements of 21. BImSchV, Section 3(1) (see checklist item 1-147) must be assessed by an expert within 6 weeks after the systems are put into operation and every 5 yr thereafter (21. BImSchV, Section 6(2)).	Verify that compliance with the requirements of 21. BImSchV, Section 3(1) is assessed by an expert within 6 weeks after the systems are put into operation and every 5 yr thereafter. (1)(3)(4)(5)(10)
...	...

(1) BCE (Base Civil Engineering/Environmental Planning) (2) BEE (Bioenvironmental Engineering) (3) Air Pollution Source Operator (4) Fuels Management Branch (5) Transportation - Maintenance Branch (6) LGS (Base Supply) (7) MWR (Morale, Welfare, and Recreation) Auto Hobby Shop (8) Refrigeration Shops (BCE) (9) Equipment Maintenance Squadron (10) AAFES (Army/Air Force Exchange Service) Gas Station

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-145. Certain actions must be taken immediately if the expert assessment indicates that the gas recycling system does not comply with relevant requirements (21. BImSchV, Section 6(3)).	Verify that repairs are undertaken immediately. (1)(3)(4)(5)(10) Verify that the installation arranges to have an expert conduct a follow-up assessment within 6 weeks of the original assessment.
...	...
1-146. A report is to be produced on the results of the expert assessment, and the report is to be handled in certain ways (21. BImSchV, Section 6(4).	Verify that a written report on the results of the expert assessment is produced. (1)(3)(4)(5)(10) Verify that a copy of the report is submitted to the competent authority within 4 weeks of the assessement. Verify that the report is kept onsite for 5 yr.

(1) BCE (Base Civil Engineering/Environmental Planning) (2) BEE (Bioenvironmental Engineering) (3) Air Pollution Source Operator (4) Fuels - Management Branch (5) Transportation - Maintenance Branch (6) LGS (Base Supply) (7) MWR (Morale, Welfare, and Recreation) Auto Hobby Shop (8) Refrigeration Shops (BCE) (9) Equipment Maintenance Squadron (10) AAFES (Army/Air Force Exchange Service) Gas Station

Table 1-1

Facilities That Require Permits Under BImSchG, Section 4 and 4. BImSchV

Chart One

1. Heat Generation, Mining, Energy

    1. Power plants, heating and power stations, and heating stations with combustion facilities for the use of solid, liquid, or gaseous fuels if the thermal output exceeds 50 MW.

    2. Combustion facilities (including the boilers that belong to them) for the use of
        a. coal, coke (including petroleum coke and residual coke from coal gasification), coal briquettes, peat briquettes, combustible peat, fuel oils, methanol, ethanol, untreated wood as well as
            i. painted, lacquered, or coated wood as well as wastes from it, as long as they do not contain or are not treated with wood preservatives and the coatings do not consist of halogenated organic compounds, or
            ii. plywood, particle boards, fiber boards, or any other kind of bonded wood as well as wastes from it as long as they do not contain or are not treated with wood preservatives and the coatings do not consist of halogenated compounds with a thermal output of 50 MW or more, or
        b. gaseous fuels
            i. gases from the public gas supply, untreated natural gas, or petroleum gas with comparable sulfur content, liquid gas or hydrogen,
            ii. sewer gas with a content of sulfur compounds up to 1/1000, given as sulfur, or biogas from agriculture,
            iii. coke oven gas, mine gas, steel gas, blast furnace gas, refinery gas, synthesis gas with a content of sulfur compounds up to 1/1000, given as sulfur with thermal output of 50 MW or more.

    3. Combustion facilities (including boilers that belong to them) that use solid, liquid, or gaseous fuels other than those mentioned in 2 with a thermal output of 1 MW or more.

4. Gas turbines with a thermal output of at least 50 MW that drive generators or machines; closed cycle gas turbines are excepted.

5. Cooling towers with a cooling water flow rate of 10,000 m^3/h. (NOTE: No emissions declaration is required of such a facility.)

2. Nonmetallic Minerals, Glass, Ceramics, Construction Materials

1. Facilities for the production or melting of mixtures of bitumen or tar and mineral substances, including processing plants for bituminous road building materials and mastic asphalt with a production capacity of 200 tons or more per hour.

3. Steel, Iron, and other Metals, including the processing of them

1. Facilities with a throughput of lead, tin, zinc, nickel, cobalt, or their alloys greater than 50 kg per hour that apply metallic protective coatings by means of flame spraying or electric-arc spraying.

2. Facilities consisting of one or more machine-driven hammers if the impact energy exceeds 20 kJ; drop works are treated as hammers. (NOTE: No emissions declaration is required of such a facility.)

3. Facilities for deforming with explosives or for coating with explosives if 10 kg or more are used per detonation. (NOTE: No emissions declaration is required of such a facility.)

4. Facilities for shredding scrap in rotary mills whose rotary drive has a nominal capacity of 500 kw or more.

4. Chemical Products, Pharmaceuticals, and the Refining and further Processing of Petroleum

1. Facilities with a capacity of 3 tons or more per hour that convert organic solvents by distillation.

5. The Treatment of Surfaces using Organic Substances, Production of Materials in the Form of Webs from Synthetic Materials, other Processing of Resins and Synthetic Materials

    1. Facilities for coating, lacquering, laminating, impregnating, or saturating objects, glass or mineral fibers, or materials in the form of webs or boards, including associated drying facilities, when the following are used:
        a. lacquers that contain organic solvents, if 250 kg or more are used per hour
        b. reaction resins (such as melamine, urea, phenol, epoxy, furan, cresol, resorcinol, or polyester resins), if 25 kg or more are used per hour
        c. synthetics or rubber, if more than 250 kg or more are used per hour.

    (NOTE: Facilities that use coating powders [*Pulverlacken*] or powder-coating materials [*Pulverbeschichtungsstoffe*] are exempted.)

    2. Facilities for printing materials in the form of webs or boards with rotary printing presses, including the accompanying drying facilities, if the inks or lacquers
        a. contain organic solvents that contain more than 50% ethanol by weight and 500 kg or more of organic solvent are used per hour, or
        b. contain other organic solvents and 250 kg or more are used per hour.

    (NOTE: Facilities are exempted if they use oils with high boiling points as solvents and do not heat-treat them.)

6. Wood, Chemical Pulp

    There are no relevant facilities under this heading.

7. Foods, Luxury Foods, Feed, and Agricultural Products

    There are no relevant facilities under this heading.

8. Utilization and Disposal of Residual Substances

    1. Facilities that either partially or completely dispose of solid or liquid substances by combustion; facilities that dispose of substances containing halogenated hydrocarbons also require a permit even if they are to be operated for fewer than 12 mo at the same location.

2. Facilities for the thermal decomposition of combustible solid or liquid substances under conditions of oxygen deficiency (pyrolysis facilities).

3. Facilities for recovering individual components from solid substances by combustion.

4. Facilities with a capacity of 1 ton or more per hour that process solid wastes to which the provisions of the Waste Act apply, except for facilities that recover materials from household wastes or similar wastes by sorting for reuse or recycling.

5. Facilities for the chemical processing of concentrates that contain cyanide, or for the processing of nitrites, nitrates, or acids, insofar as the process makes it possible to utilize the materials as residual substances or to dispose of them as waste.

6. Facilities for handling polluted soil that has been removed from a location other than the site of the facility itself, even if the facilities are expected to be operated for fewer than 12 mo at the same location.

9. Storage, Loading, and Unloading of Substances

1. Facilities for storing flammable gases in containers with a capacity of 30 tons or more, with the exception of facilities for the storage of flammable gases or products that contain flammable gases (i.e., as propellants or burnable gas), if the volume of the individual containers does not exceed 1000 cubic meters each. (NOTE: No emissions declaration is required of such a facility.)

2. Facilities for storing petroleum, liquid petroleum products or methanol from other substances in containers with a capacity of 50,000 tons or more.

3. Facilities for storing 200 tons or more of acrylonitrile.

4. Facilities for storing 75 tons or more of chlorine.

5. Facilities for storing 250 tons or more of sulfur dioxide.
   (NOTE: No emissions declaration is required of such a facility.)

6. Facilities for storing 2000 tons or more of liquid oxygen.
   (NOTE: No emissions declaration is required of such a facility.)

7. Facilities for storing 100 tons or more of plant protectants or pesticides or their active ingredients.
   (NOTE: No emissions declaration is required of such a facility.)

8. Facilities for the transfer of solid wastes in the sense of Section 1 paragraph 1 of the Waste Disposal Act, that have a capacity of 100 tons or more per day, except for facilities for the transfer of excavated earth or rock that accumulates when extracting or processing *mineral resources.*

9. Facilities for storing 100 tons or more of sulfur trioxide

10. Facilities for storing 2500 tons or more of preparations containing ammonium nitrate that belong to group B of Appendix IV number 2 of the GefStoffV

11. Facilities for storing 30 tons or more of ammonia.

12. Facilities for storing 0.75 tons or more of phosgene

13. Facilities for storing 50 tons or more of hydrogen sulfide.

14. Facilities for storing 50 tons or more of hydrofluoric acid.

15. Facilities for storing 20 tons or more of hydrogen cyanide.

16. Facilities for storing 200 tons or more of carbon disulfide.

17. Facilities for storing 200 tons or more of bromine.

18. Facilities for storing 50 tons or more of acetylene

19. Facilities for storing 30 tons or more of hydrogen
    (NOTE: No emissions declaration is required of such a facility.)

20. Facilities for storing 50 tons or more of ethylene oxide.

21. Facilities for storing 50 tons or more of propylene oxide.

22. Facilities for storing 200 tons or more of acrolein.

23. Facilities for storing 50 tons or more of formaldehyde or paraformaldehyde (at a concentration greater than or equal to 90 percent).

24. Facilities for storing 200 tons or more of bromomethane.

25. Facilities for storing 0.15 tons or more of methyl isocyanate.

26. Facilities for storing 50 tons or more of tetraethyl or tetramethyl lead.

27. Facilities for storing 50 tons or more of 1,2-dibromomethane.

28. Facilities for storing 200 tons or more of hydrochloric acid (liquefied gas).

29. Facilities for storing 200 tons or more of diphenylmethane diisocyanate (MDI).

30. Facilities for storing 100 tons or more of toluylene diisocyanate.

31. Facilities for storing 20 tons or more of highly toxic substances or preparations.

32. Facilities for storing 200 tons or more of substances or preparations that are highly toxic or toxic, that promote burning, or that are explosive.

10. Other

    1. Facilities for the production, working, processing, recovery, or destruction of explosive substances within the meaning of the Explosives Act which are used as explosives, detonating agents, propellants, pyrotechnical devices or for the production of these substances; also included are facilities for loading, unloading or disassembling ammunition or other explosive devices; facilities that produce matches are not included, nor is portable equipment for mixed loads (*Mischladegeraete*).
    (NOTE: No emissions declaration is required of such a facility, if no explosives are destroyed.)

Chart Two

1. Heat Generation, Mining, Energy

    1. Combustion facilities (including the boilers that belong to them) that use:
        a. coal, coke (including petroleum coke and residual coke from coal gasification), coal briquettes, peat briquettes, combustible peat, and fuel oils, except EL fuel oil, methanol, ethanol, and untreated wood, as well as
            i. painted, lacquered, or coated wood as well as wastes from it, as long as they do not contain or are not treated with wood preservatives and the coatings do not consist of halogenated compounds, or
            ii. plywood, particle boards, fiber boards, or any other kind of bonded wood as well as wastes from it, as long as they do not contain or are not treated with wood preservatives and the coatings do not consist of halogenated compounds with a thermal output of from 1 MW to less than 50 MW, or
        b. EL fuel oil with a thermal output of from 5 to less than 50 MW, or
        c. gaseous fuels
            i. gases from public gas supply, untreated natural gas or petroleum gas with comparable sulfur contents, liquid gas or hydrogen,
            ii. sewer gas with a content of sulfur compounds up to 1/1000, given as sulfur, or biogas from agriculture,
            iii. coke oven gas, mine gas, steel gas, blast furnace gas, refinery gas, synthesis gas with a content of sulfur compounds up to 1/1000, given as sulfur, with a thermal output of 10 MW to less than 50 MW.

    2. Combustion facilities that use solid, liquid, or gaseous fuels other than those mentioned in Chart One, Number 1.2 with a thermal output of 100 kw to less than 1 MW.

    3. Internal combustion engines using:
        a. waste oil or waste dump gas or
        b. combustible substances other than waste oil or waste dump gas with a thermal output of 1 MW or more, except internal combustion engines for drilling rigs and emergency generators.

4. Gas turbines with a thermal output of less than 50 MW that drive generators or machines; closed cycle gas turbines are excepted.

5. Transformer stations including switchboard sections with a primary voltage of 220 kilovolts or more, with the exception of transformer stations that are *eingehaust*.
   (NOTE: No emissions declaration is required of such a facility.)

2. Nonmetallic Minerals, Glass, Ceramics, Construction Materials

   1. Facilities that produce molded parts using cement or other binding agents by tamping, shocking, shaking, or vibration and that have an output of 1 ton or more.
      (NOTE: No emissions declaration is required of such a facility.)

   2. Facilities for the production or melting of mixtures of bitumen or tar and mineral substances, including processing plants for bituminous road building materials and mastic asphalt with a production capacity of up to 200 tons per hour.
      (NOTE: No emissions declaration is required of such a facility.)

3. Steel, Iron and other Metals including Processing

   1. Facilities consisting of one or more die casting machines with locking pressures of 2 meganewtons or more.

   2. Facilities with a capacity of from 500 kg to 10 tons of raw material throughput per hour that apply metallic protective coatings of lead, tin, or zinc to metal surfaces by means of melted baths except for facilities for continuous galvanization.

   3. Facilities with a throughput of lead, tin, zinc, nickel, cobalt, or their alloys from 2 to less than 50 kg per hour that apply metallic protective coatings by means of flame spraying or electric-arc spraying.

   4. Facilities consisting of one or more machine-driven hammers if the impact energy is between 1 kJ and 20 kJ; drop works are treated as hammers.

   5. Facilities for the treatment of the surface of metals by applying hydrofluoric acid or nitric acid, except for chromizing facilities.

6. Facilities for shredding scrap in rotary mills whose rotary drive has a nominal capacity of from 100 kw to less than 500 kw.

7. Facilities that treat the surfaces of things made of structural steel, tin, or cast metal with solid abrasives, if operated outside of enclosed areas.
   (NOTE: Enclosed stripping cabinets that cannot be entered are exempt.)

4. Chemical Products, Pharmaceuticals, the Refining and Further Processing of Petroleum

   1. Facilities with a capacity of from 1 to less than 3 tons/h that convert organic solvents by distillation.

5. Treatment of Surfaces using Organic Substances, Production of Materials in the Form of Webs from Synthetic Materials, other Processing of Resins or Synthetic Materials

   1. Facilities for coating, lacquering, laminating, impregnating, or saturating objects, glass or mineral fibers, or materials in the form of webs or boards, including associated drying facilities, when the following are used:
      a. lacquers that contain organic solvents, if from 25 kg to less than 250 kg are used per hour
      b. reaction resins (such as melamine, urea, phenol, epoxy, furan, cresol, resorcinol, or polyester resins), if from 10 kg to less than 25 kg are used per hour
      c. synthetics or rubber, if from 25 to less than 250 kg are used per hour.

      (NOTE: Facilities that use coating powders [*Pulverlacken*] or powder-coating materials [*Pulverbeschichtungsstoffe*] are exempted.)

   2. Facilities for printing materials in the form of webs or boards with rotary printing presses, including the drying facilities, if the paints and lacquers:
      a. contain organic solvents that contain more than 50 percent ethanol by weight, and if between 50 and less than 500 kg are used per hour, or
      b. contain other organic solvents and between 25 and less than 250 kg are used per hour.

      (NOTE: Facilities are exempted if they use oils with high boiling points as solvents and do not heat-treat them.)

6. Wood, Chemical Pulp

   There are no relevant facilities under this heading.

7. Foods, Luxury Foods, Feed, and Agricultural Products

   There are no relevant facilities under this heading.

8. Utilization and Disposal of Residual Substances

   1. Facilities with a capacity of 1 ton or more per hour that recover materials from household or similar wastes by sorting for reuse or recycling.

   2. Facilities for handling polluted soil that has been removed from a location other than the site of the facility itself, even if the facilities are expected to be operated for fewer than 12 mo at the same location.

9. Storage, Loading, and Unloading of Substances and Preparations

   1. Facilities for storing flammable gases or products that contain flammable gases (i.e., as propellants or burnable gas), if the individual containers do not exceed 1000 m^3 each and if a total of 30 tons or more are stored; other facilities for storing flammable gases in containers, if the facilities have a capacity of from 3 to 30 tons. (NOTE: No emissions declaration is required of such a facility.)

   2. Facilities for storing:
      - from 5000 to less than 50,000 tons of petroleum products whose flash point is under 21 °C and whose boiling point at standard pressure (1013 mbar) is lower than 20 °C
      - from 5000 to less than 50,000 tons of methanol the source of which is not petroleum
      - from 10,000 to less than 50,000 tons of petroleum or other petroleum products in liquid form in containers.

   3. Facilities for storing from 20 to less than 200 tons of acrylonitril.

   4. Facilities for storing from 10 to less than 75 tons of chlorine.

   5. Facilities for storing from 20 to less than 250 tons of sulfur dioxide. (NOTE: No emissions declaration is required of such a facility.)

6. Facilities for storing from 200 to less than 2000 tons of liquid oxygen.
   (NOTE: No emissions declaration is required of such a facility.)

7. Facilities for storing 25 tons to less than 500 tons of ammonium nitrate or preparations containing ammonium nitrate that belong to group A of Appendix IV Number 2 of the GefStoffV.
   (NOTE: No emissions declaration is required of such a facility.)

8. Facilities for storing between 5 tons and less than 100 tons of alkali chlorate.
   (NOTE: No emissions declaration is required of such a facility.)

9. Facilities for storing between 5 tons and less than 100 tons of plant protectants or pesticides or their active ingredients.
   (NOTE: No emissions declaration is required of such a facility.)

10. Open or incompletely closed facilities for loading and unloading bulk goods that may dust when dry, that are unloaded by tilting the vehicle or container or by means of excavators, shovel loaders, grippers, siphons or similar devices, if 200 tons or more of bulk goods can be moved per day, except for facilities for loading and unloading excavated earth or stones that have accumulated in connection with extracting or processing mineral resources.

11. Facilities for storing from 15 to less than 100 tons of sulfur trioxide.

12. Facilities for storing between 100 tons and less than 2500 tons of preparations containing ammonium nitrate that belong to group B of Appendix IV of the GefStoffV.
    (NOTE: No emissions declaration is required of such a facility.)

13. Facilities for storing from 3 to less than 30 tons of ammonia.

14. Facilities for storing from 0.075 to less than 0.75 tons of phosgene.

15. Facilities for storing from 5 to less than 50 tons of hydrogen sulfide.

16. Facilities for storing from 5 to less than 50 tons of hydrofluoric acid.

17. Facilities for storing from 5 to less than 20 tons of hydrogen cyanide.

18. Facilities for storing from 20 to less than 200 tons of carbon disulfide.

19. Facilities for storing from 20 to less than 200 tons of bromine.

20. Facilities for storing from 5 to less than 50 tons of acetylene.

21. Facilities for storing from 3 to less than 30 tons of hydrogen. (NOTE: No emissions declaration is required of such a facility.)

22. Facilities for storing from 5 to less than 50 tons of ethylene oxide.

23. Facilities for storing from 5 to less than 50 tons of propylene oxide.

24. Facilities for storing from 20 to less than 200 tons of acrolein.

25. Facilities for storing from 5 to less than 50 tons of formaldehyde or paraformaldehyde (at a concentration greater than or equal to 90 percent).

26. Facilities for storing from 20 to less than 200 tons of bromomethane.

27. Facilities for storing from 0.015 to less than 0.15 tons of methyl isocyanate.

28. Facilities for storing from 5 to less than 50 tons of tetraethyl or tetramethyl lead.

29. Facilities for storing 5 to less than 50 tons of 1,2-dibromomethane.

30. Facilities for storing from 20 to less than 200 tons of hydrochloric acid (liquefied gas).

31. Facilities for storing from 20 to less than 200 tons of diphenylmethane diisocyanate (MDI).

32. Facilities for storing from 10 to less than 100 tons of toluylene diisocyanatea.

33. Facilities for storing from 2 to less than 20 tons of highly toxic substances or preparations.

34. Facilities for storing from 10 to less than 200 tons of substances or preparations that are highly toxic or toxic, that promote burning, or that are explosive.

10. Miscellaneous

    1. Pitch boiling facilities.

    2. Test beds either for or equipped with combustion engines or gas turbines, with a capacity of 300 kw or more.

    3. Test beds either for or with air screws, reaction drive units, or jet engines.

    4. Facilities that are used for motor sports on 5 or more days per year, except for model sport facilities. (NOTE: No emissions declaration is required of such a facility.)

    5. Shooting galleries for hand guns (unless they are in enclosed spaces), and shooting ranges. (NOTE: No emissions declaration is required of such a facility.)

    6. Facilities for the liquefaction of air with a throughput of 25 tons of air or more per hour.

    7. Facilities that clean tools, equipment, or other metallic objects by heat processes.

    8. Facilities for cleaning the interiors of railroad steam engines, tank trucks, or tanks/containers, and facilities that clean barrels automatically (including reconditioning facilities), fi the containers a are cleaned using organic substances. Facilities in which containers from foodstuffs, coffee, alcohol, tobacco, feed only are cleaned.

    9. Fumigation and sterilization facilities, if the capacity of the fumigation or sterilization chamber is greater than 1 m^3 and if highly toxic or toxic materials or preparations are employed.

    10. Refrigeration plants with from 3 to 30 tons of ammonia coolant.

Table 1-2

Facilities That Are Required To Appoint Immissions Control Officers

1. Power stations, thermal power stations, and heating plants with furnaces that burn solid, liquid, or gaseous fuels and the heat output of which is greater than:
   a. 150 MW for solid or liquid fuels
   b. 250 MW for gaseous fuels
2. Furnaces with a heat output of 150 MW or more that burn coal, coke, hard coal or lignite briquettes, peat, fuel oils, wood, scrap wood, or other solid or liquid combustibles
3. Furnaces with a heat output of 250 MW or more that that burn gaseous fuels
4. Facilities that produce, treat, or process asbestos
5. Facilities for the preparation of bituminous road-surfacing materials and tar-splitting plants, if one operator operates more than 10 facilities
6. Painting and drying operations that involve at least 250 kg/hr of paints that contain organic solvents, and the attached drying facilities
7. Facilities for coating, impregnating, or soaking glass fibers or mineral fibers with synthetic resins, plastics, rubber, or organic solvents (if 250 kg/h of these are used), and the attached drying facilities
8. Facilities that produce lengths of material on spreading machines (bahnenfoermige Materialen auf Streichmaschinen) using mixtures of synthetics and softening agents or mixtures of other substances and oxydized linseed oil, and the attached drying facilities
9. Facilities the purpose of which is to dispose in whole or in part of solid or liquid substances by burning or thermal decomposition, if the throughput is 750 kg/h or more.

(NOTE: Installations that have facilities that are not required by law to have Immissions Protection Officers may be required by the competent authority to appoint one.)

(NOTE: One Immissions Protection Officer may be appointed for several facilities operated by the installation if it is certain that the person can effectively carry out his/her responsibilities.)

Table 1-3

Information To Be Included In An Emissions Declaration -- Option 1 (Equivalent to Anhang 1 of 11. BImSchV)

Emissions Declaration

- Declaration Period

Owner / Operator

- Name
- Address
  - -- Postal code
  - -- City
  - -- Street / Number

Plant / Firm

- Name
- Location
  - -- Postal code
  - -- City
  - -- Street / Number
- Person Preparing Declaration
  - -- Division
  - -- Official in Charge
  - -- Telephone Number
- Class Number for the Sector of the Economy to Which the Operation Belongs
- Location / Date / Signature

Sources

- Description
  - -- Number
  - -- Name
  - -- Kind

- Location

  -- Rechtswert [in m]
  -- Hochwert [in m]
  -- Geodetic height [in m]

- Dimensions

  -- Surface area [in square meters (m^2)]
  -- Geometric height [in m]
  -- Length [in m]
  -- Width or height [in m]
  -- Angle from North-South axis, given clockwise in degrees, relative to the long side of the property

Facility

- First Declaration / Up-date / Final Declaration
- Number
- Name
- Number and Column Number from Appendix to 4. BImSchV
- Most Recent Permit / Notification
  - Agency
  - Reference number
  - Date
- Installed Output / Capacity
  -- Coefficient of measure [Masszahl]
  -- Unit of measurement
  -- Reference [Bezug]
- Degree of utilization [%]
- Shift operation (Number)
- Number of workdays per week
- Operating hours [h/yr]
- Length of operating time (from / to)

Parts of Facilities and Auxiliary Equipment

- Number of the facility
- Number
- Name
- Number and Column Number from Appendix to 4. BImSchV

- Installed Output / Capacity
  - -- Coefficient of measure [Masszahl]
  - -- Unit of measurement
  - -- Reference [Bezug]
- Degree of utilization [%]
- Operating hours [h/yr]

Operations Units [Betriebseinheiten]

- Number of the facility
- Number of the part of the facility or of the auxiliary equipment
- Number
- Name
- Kind / Type

Materials on hand

- Number of the Facility
- Number of the part of the facility or of the auxiliary equipment
- Number of the operations unit
- Name
- Manner of use
- Net calorific value [kJ/kg]
- Mass flow rate [tons/yr]
- Composition
  - -- Name
  - -- Contents [%] [Massengehalt]

Operational Processes that Produce Emissions

- Number of the facility
- Number of the part of the facility or auxiliary equipment
- Number of the operational unit
- Number of the source
- Number
- Kind
- Name
- Zeitliche Lage (h/mo)
- Total length of operation (h/yr)
- Waste gas
  - -- kind of treatment [Reinigungsart]
  - -- waste gas stream [m^3/h]
  - -- vapor content [vol %]
  - -- temperature [^oC]
  - -- method by which the waste gas stream was measured

Emissions

- Number of the Facility
- Number of the part of the facility or auxiliary equipment
- Number of the operational unit
- Number of the source
- Number of the operational process that produces the emissions
- Material emitted
  - -- Name
  - -- Aggregate state
  - -- Concentration [mg/m^3]
  - -- Mass flow rate [tons/yr]
  - -- Total amount of emitted material [kg/yr]
  - -- Maximum concentration [mg/m^3]
  - -- Method by which the mass flow rate or concentration was measured

NOTES:

The facilities points sources and/or the emissions released by the facility into the atmosphere are to be given unique numbers. One source number may not be used more than once, nor may any one source have multiple numbers.

The location of the facility is given in Gauss-Krueger coordinates (+/ - 10 m); only those sources that release emissions over a surface area need have their locations indicated using length, width, height, and angle.

The kind and purpose of the facility must be unambiguously clear from the name given to it. One may include the name by which it is known on the installation as supplementary information.

Parts of facilities and auxiliary equipment that belong to facilities that require a permit under BImSchG must have unique names and numbers.

If parts of facilities and/or auxiliary equipment themselves require separate permits under BImSchG, the appropriate number and column from the Appendix to 4. BImSchV must be indicated.

The faclity itself, or the parts of the facility and its auxiliary equipment, as the case may be, are to be assigned to operational areas. In particular, those operational areas are to be indicated that are independent of other parts of the facility from the point of view of emissions.

Under the heading "Material on hand" those materials are to be listed from which one can infer information about the facilities emissions or that are necessary for establishing a mass balance. Examples are anthracite, natural gas, pig iron, bitumen, and cement. In addition, the way in which the materials on hand are used (i.e., fuel, charge, product, residual material, operational material used in the facility) should be indicated. The materials on hand are to be listed for each operational unit separately. The net calorific value is to be indicated for those materials that are to be burned. Very toxic and carcinogenic constituents are to be included if doing so is important from the point of view of analyzing the facility's emissions (i.e., the content of heavy metals in heavy fuel oil, the residual monomer content of raw synthetics).

If Table 1-2 is used, the operational processes that cause emissions in each operational unit are to be named and numbered continuously. The emissions for each operational process that causes emissions is to be indicated in the declaration. Processes that depart from normal operating procedures are to be listed separately. The waste gas stream and the concentration are to be given for the damp state under standard conditions (273 ^{o}K, 1013 hPa), and the moisture content is to be included as well. In addition, the sum total of emissions for each individual substance is to be included in the declaration. The emissions (i.e., sulfur dioxide, toluene, zinc chromate) that occurred in the reporting period are to be given for each individual substance, and the information is to be as accurate as possible. Information on individual substances need not be given if the emissions per facility do not exceed 1 kg/h and 25 kg in the reporting period. However, very toxic and carcinogenic substances must be reported if they exceed only 1/100th of those amounts. Emissions of 2,3,7,8-tetrachlorodibenzo-p-dioxins and substances with a comparable toxic effect must be indicated in any event. Very toxic and carcinogenic constituents must also be listed if the information is necessary for evaluating emissions (i.e., the heavy metal content of heavy fuel oil or the residual monomer content of raw synthetics).

Table 1-4

Information to Be Included in an Emissions Declaration -- Option 2 (Equivalent to Anhang 2 of 11. BImSchV)

Emissions Declaration

- Declaration Period

Owner / Operator

- Name
- Address
  - -- Postal code
  - -- City
  - -- Street / Number

Plant / Firm

- Name
- Location
  - -- Postal code
  - -- City
  - -- Street / Number
- Person Preparing Declaration
  - -- Division
  - -- Official in Charge
  - -- Telephone Number
- Class Number for the Sector of the Economy to Which the Operation Belongs
- Location / Date / Signature

Sources

- Description
  - -- Number
  - -- Name
  - -- Kind

- Location

  - -- Rechtswert [in m]
  - -- Hochwert [in m]
  - -- Geodetic height [in m]

- Dimensions

  -- Surface area [in m^2]
  -- Geometric height [in m]
  -- Length [in m]
  -- Width or height [in m]
  -- Angle from North-South axis, given clockwise in degrees, relative to the long side of the property

Facility

- First Declaration / Up-date / Final Declaration
- Number
- Name
- Number and Column Number from Appendix to 4. BImSchV
- Most Recent Permit / Notification
  -- Agency
  -- Reference number
  -- Date
- Installed Output / Capacity / Number of Spaces for Animals
  -- Coefficient of measure [Masszahl]
  -- Unit of measurement
  -- Reference [Bezug]
- Degree of utilization [%]
- Shift operation (Number)
- Number of workdays per week
- Operating hours [h/yr]
- Length of operating time (from / to)

Method of cleaning waste gas

Parts of Facilities and Auxiliary Equipment

- Number of the facility
- Number
- Name
- Number and Column Number from Appendix to 4. BImSchV
- Installed Output / Capacity
  -- Coefficient of measure [Masszahl]
  -- Unit of measurement
  -- Reference [Bezug]
- Degree of utilization [%]
- Operating hours [h/yr]

Operations Units [Betriebseinheiten]

- Number of the facility
- Number of the part of the facility or of the auxiliary equipment
- Number
- Name
- Kind / Type

Materials on hand

- Number of the Facility
- Number of the operations unit
- Name
- Manner of use
- Net calorific value [kJ / kg]
- Mass flow rate [tons/yr]
- Composition
  - -- Name
  - -- Contents [%] [Massengehalt]

NOTES:

The facilities points sources and/or the emissions released by the facility into the atmosphere are to be given unique numbers. One source number may not be used more than once, nor may any one source have multiple numbers.

The location of the facility is given in Gauss-Krueger coordinates (+/ - 10 m); only those sources that release emissions over a surface area need have their locations indicated using length, width, height, and angle.

The kind and purpose of the facility must be unambiguously clear from the name given to it. One may include the name by which it is known on the installation as supplementary information.

Parts of facilities and auxiliary equipment that belong to facilities that require a permit under BImSchG must have unique names and numbers.

If parts of facilities and/or auxiliary equipment themselves require separate permits under BImSchG, the appropriate number and column from the Appendix to 4. BImSchV must be indicated.

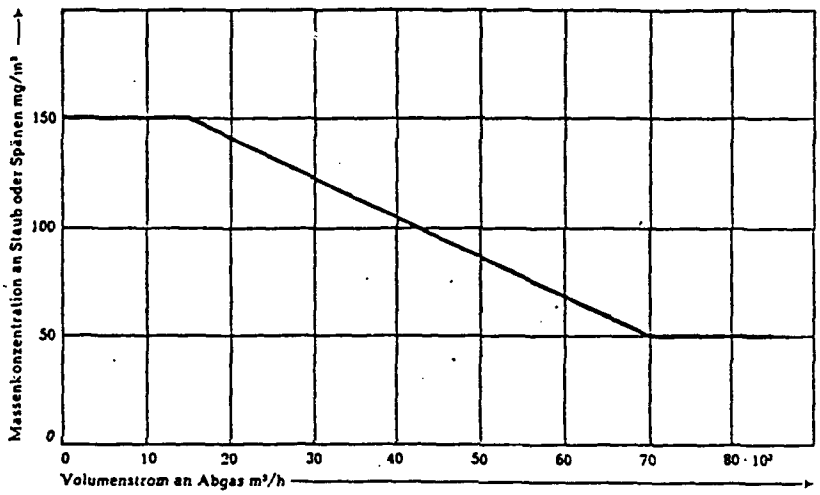
The facility itself, or the parts of the facility and its auxiliary equipment, as the case may be, are to be assigned to operational areas. In particular, those operational areas are to be indicated that are independent of other parts of the facility from the point of view of emissions.

Under the heading "Material on hand" those materials are to be listed from which one can infer information about the facilities emissions or that are necessary for establishing a mass balance. Examples are anthracite, natural gas, pig iron, bitumen, and cement. In addition, the way in which the materials on hand are used (i.e., fuel, charge, product, residual material, operational material used in the facility) should be indicated. The materials on hand are to be listed for each operational unit separately. The net calorific value is to be indicated for those materials that are to be burned. Very toxic and carcinogenic constituents are to be included if doing so is important from the point of view of analyzing the facility's emissions (i.e., the content of heavy metals in heavy fuel oil, the residual monomer content of raw synthetics).

If Table 1-2 is used, the operational processes that cause emissions in each operational unit are to be named and numbered continuously. The emissions for each operational process that causes emissions is to be indicated in the declaration. Processes that depart from normal operating procedures are to be listed separately. The waste gas stream and the concentration are to be given for the damp state under standard conditions (273 ^{o}K, 1013 hPa), and the moisture content is to be included as well. In addition, the sum total of emissions for each individual substance is to be included in the declaration. The emissions (i.e., sulfur dioxide, toluene, zinc chromate) that occurred in the reporting period are to be given for each individual substance, and the information is to be as accurate as possible. Information on individual substances need not be given if the emissions per facility do not exceed 1 kg/h and 25 kg in the reporting period. However, very toxic and carcinogenic substances must be reported if they exceed only 1/100th of those amounts. Emissions of 2,3,7,8-tetrachlorodibenzo-p-dioxins and substances with a comparable toxic effect must be indicated in any event. Very toxic and carcinogenic constituents must also be listed if the information is necessary for evaluating emissions (i.e., the heavy metal content of heavy fuel oil or the residual monomer content of raw synthetics).

Table 1-5

Emissions Limits for Woodworking or processing Facilities that Do Not Require a Permit under BImSchG



(NOTE: The vertical axis represents the concentration by weight of dust, chips, or shavings in mg/m^3. The horizontal axis represents the volume of the waste gas stream in m^3/h.)

(NOTE: If several facilities are in close spatial and operation contiguity with one another, the total of their exhaust streams must be used in evaluating compliance with these requirements.)

Table 1-6

Air Emissions Standards for Large Furnaces that Burn Solid Fuel

(NOTE: Unless otherwise specified, the concentration of oxygen in the waste gas is 7 percent by weight for grate firings and fluidized bed firings, 6 percent for coal dust firings with dry ash removal, and 5 percent for coal dust firings with wet ash removal.)

Particulate matter	50 mg/m^3 [1]
Carbon Monoxide	250 mg/m^3
Nitrogen Monoxide and Nitrogen Dioxide (given as NO_2)	800 mg/m^3 [2]
Sulfur Dioxide & Sulfur Trioxide (given as SO_2)	400 mg/m^3 [3]
for grate firing or coal dust firing and a heat output greater than 100 MW up to and including 300 MW	2000 mg/m^3 [4]
for grate firing or coal dust firing and a heat output up to and including 100 MW	2000 mg/m^3 [5]
for fluidized bed firing and heat output up to and including 300 MW	400 mg/m^3 [6]
Inorganic Halogen Compounds (Applies only to furnaces with grate firing or coal dust firing)	
heat output up to and including 300 MW	
Chlorine compounds (given as HCl)	200 mg/m^3
Fluorine compounds (given as HF)	30 mg/m^3

heat output greater than 300 MW	
Chlorine compounds (given as HCl)	100 mg/m^3
Fluorine compounds (given as HF)	15 mg/m^3

1. If solid fuels other than coal or wood are used, particulate emissions of arsenic, lead, cadmium, chromium, cobalt, nickel, and compounds including those elements may not exceed a total of more than 0.5 mg/m^3 of waste gas.

2. For furnaces that do coal dust firings with hard coal and wet ash removal, the limit is 1800 mg/m^3 at an oxygen concentration of 5 percent.

3. The level of sulfur emissions may not exceed 15 percent. If, given state of the art technology, that limit on the level of sulfur emissions and the limit of 400 mg/m^3 cannot be observed because fuel that has a particularly high or variable sulfur content is in use, then desulfurization equipment must be used. A concentration of 650 mg/m^3 by weight may not be exceeded.

4. The level of sulfur emissions may not exceed 40 percent.

5. The competent authority may may allow a concentration by weight of no higher than 2500 mg/m^3 for a period of up to one year if:

   - low-sulfur coal that would allow the standards to be met will not be available during the time-period, and
   - the height of the stack meets the requirements of 13. BImSchV, Section 29(1) during the period for which the variance is granted (See checklist item 1-52).

6. This standard is relative to an oxygen content in the waste gas of 7 percent. The level of sulfur emissions may not exceed 25 percent.

Table 1-7

Air Emissions Standards for Large Furnaces that Burn Liquid Fuel

(NOTE: Unless otherwise specified, the concentration of oxygen in the waste gas is 3 percent by weight.)

(NOTE: The standards for sulfur emission are considered to have been met if fuel is used the sulfur content of which is 0.2 percent or less of its weight.)

Particulate matter	50 mg/m^3 [1]
Carbon Monoxide	175 mg/m^3
Nitrogen Monoxide and Nitrogen Dioxide (given as NO_2)	450 mg/m^3
Sulfur Dioxide and Sulfur Trioxide (given as SO_2)	400 mg/m^3 [2]
heat output greater than 100 MW up to and including 300 MW	1700 mg/m^3 [3]
heat output up to and including 100 MW	1700 mg/m^3 [4]
Inorganic Halogen Compounds [5]	
Chlorine compounds (given as HCl)	30 mg/m^3
Fluorine compounds (given as HF)	5 mg/m^3

1. This standard applies only after deducting the amount of adsorbed sulfuric acid. If fuel oils under DIN 51 603 Part I (December 1981) or DIN 51 603 Part II (October 1976) that have a nickel content greater than 12 mg/kg or other liquid fuels are used as fuel oil, particulate emissions of arsenic, lead, cadmium, chromium, cobalt, nickel, and compounds including those elements may not exceed a total of more than 2 mg/m^3 of waste gas.

2. The level of sulfur emissions may not exceed 15 percent. If, given state of the art technology, that limit on the level of sulfur emissions and the limit of 400 mg/m^3 cannot be observed because fuel that has a particularly high or variable sulfur content is in use, then desulfurization equipment must be operated continuously at is maximum capacity. A concentration of 650 mg/m^3 by weight may not be exceeded.

3. The level of sulfur emissions may not exceed 40 percent.

4. The competent authority may may allow a concentration by weight of no higher than 3400 mg/m^3 for a period of up to six months if:

   - low-sulfur fuel oil that would allow the standards to be met will not be available during the time-period, and
   - the height of the stack meets the requirements of Questions XX through YY during the period for which the variance is granted.

5. These limits apply only if fuel oils other than those under DIN 51 603 Part I (December 1981) or DIN 51 603 Part II (October 1976) are used.

Table 1-8

Air Emissions Standards for Large Furnaces that Burn Gaseous Fuel

(NOTE: Unless otherwise specified, the concentration of oxygen in the waste gas is 3 percent by weight.)

Particulate matter	5 mg/m^3
Carbon Monoxide	100 mg/m^3
Nitrogen Monoxide and Nitrogen Dioxide (given as NO_2)	350 mg/m^3
Sulfur Dioxide and Sulfur Trioxide (given as SO_2)	35 mg/m^3

Table 1-9

Emission Standards for Existing Large Furnaces

Particulate Emissions	
Furnaces that burn solid fuel [1]	
Brown coal as fuel	80 mg/m^3
Other solid fuel	125 mg/m^3
Furnaces that burn liquid fuel [2]	
Unavailable	
Carbon Monoxide Emissions	
Furnaces that burn solid fuel	250 mg/m^3
Furnaces that burn liquid fuel	175 mg/m^3 [3]
Furnaces that burn gaseous fuel	100 mg/m^3 [3]
Emissions of Nitrogen Dioxide and Trioxide (given as NO2)	
Furnaces with coal dust firing of hard coal and dry ash removal	1300 mg/m^3 [4]
Furnaces with coal dust firing of hard coal and wet ash removal	2000 mg/m^3 [4]
furnaces that burn other solid fuels	1000 mg/m^3 [4]
furnaces that burn liquid fuels	700 mg/m^3 [3]
furnaces that burn gaseous fuels	500 mg/m^3 [3]

Table 1-9 (continued)

Sulfur Dioxide and/or Sulfur Trioxide (given as SO_2)	
Furnaces that burn solid fuel	400 mg/m^3 [5]
for grate firing or coal dust firing and a heat output greater than 100 MW up to and including 300 MW	2000 mg/m^3 [6]
for grate firing or coal dust firing and a heat output up to and including 100 MW	2000 mg/m^3 [4]
for fluidized bed firing and heat output up to and including 300 MW	400 mg/m^3 [7]
Furnaces that burn liquid fuel	400 mg/m^3 [8]
heat output greater than 100 MW up to and including 300 MW	1700 mg/m^3 [9]
heat output up to and including 100 MW	1700 mg/m^3 [3]

1. The concentration of oxygen in the waste gas is 7 percent by weight for grate firings and fluidized bed firings, 6 percent for coal dust firings with dry ash removal, and 5 percent for coal dust firings with wet ash removal. If solid fuels other than coal or wood are used, particulate emissions of arsenic, lead, cadmium, chromium, cobalt, nickel, and compounds including those elements may not exceed a total of more than 1.5 mg/m^3 of waste gas.

2. The concentration of oxygen in the waste gas is understood to be 3 percent. If fuel oils under DIN 51 603 Part I (December 1981) or DIN 51 603 Part II (October 1976) that have a nickel content greater than 12 mg/kg or other liquid fuels are used as fuel oil, particulate emissions of arsenic, lead, cadmium, chromium, cobalt, nickel, and compounds including those elements may not exceed a total of more than 2 mg/m^3 of waste gas.

3. The concentration of oxygen in the waste gas is understood to be 3 percent.

4. The concentration of oxygen in the waste gas is 7 percent by weight for grate firings and fluidized bed firings, 6 percent for coal dust firings with dry ash removal, and 5 percent for coal dust firings with wet ash removal.

5. The level of sulfur emissions may not exceed 15 percent. If, given state of the art technology, that limit on the level of sulfur emissions and the limit of 400 mg/m^3 cannot be observed because fuel that has a particularly high or variable sulfur content is in use, then desulfurization equipment must be used. A concentration of 650 mg/m^3 by weight may not be exceeded. The standards for sulfur emissions are considered to have been met if fuel is used the sulfur content of which is 0.2 percent or less of its weight.

6. The level of sulfur emissions may not exceed 25 percent. The concentration of oxygen in the waste gas is 7 percent by weight for grate firings and fluidized bed firings, 6 percent for coal dust firings with dry ash removal, and 5 percent for coal dust firings with wet ash removal.

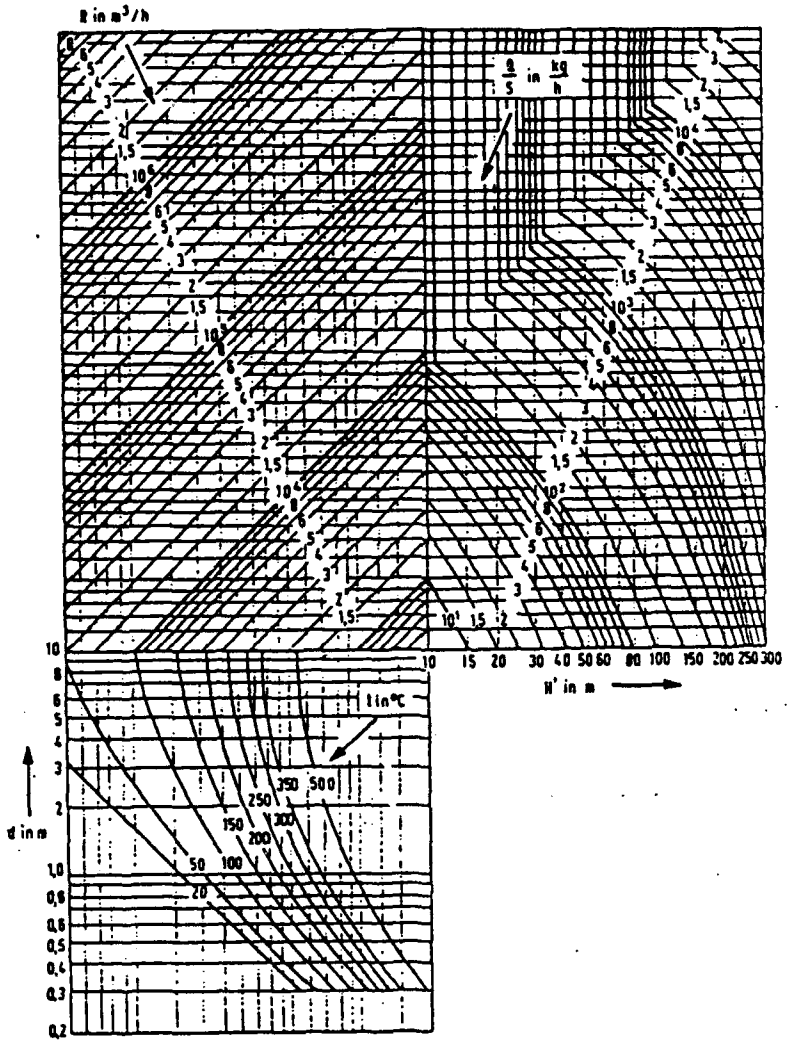
7. This standard is relative to an oxygen content in the waste gas of 7 percent. The level of sulfur emissions may not exceed 25 percent.

8. The concentration of oxygen in the waste gas is understood to be 3 percent. The level of sulfur emissions may not exceed 15 percent. If, given state of the art technology, that limit on the level of sulfur emissions and the limit of 400 mg/m^3 cannot be observed because fuel that has a particularly high or variable sulfur content is in use, then desulfurization equipment must be operated continuously at is maximum capacity. A concentration of 650 mg/m^3 by weight may not be exceeded. The standards for sulfur emissions are considered to have been met if fuel is used the sulfur content of which is 0.2 percent or less of its weight.

9. The concentration of oxygen in the waste gas is understood to be 3 percent. The level of sulfur emissions may not exceed 40 percent. The standards for sulfur emissions are considered to have been met if fuel is used the sulfur content of which is 0.2 percent or less of its weight.

Table 1-10

Stack Height for Large Furnaces



For the above nomograph:

H' in m	Stack height from nomograph
d in m	interior diameter of the stack or equivalent interior diameter of the cross-section
t in ^{o}C	temperature of the waste gas at the mouth of the stack
R in m^3/h	waste gas stream under standard conditions after deducting the moisture contributed by water vapor
Q in kg/h	emissions stream (air pollutants emitted by the source)
S	special factor for determining stack height (see below)

For t, R, and Q, insert the values that result when operating the furnace properly, but under operating conditions that are adverse from the point of view of keeping the air clean, i.e., in particular with regard to the use of fuels or crude oil. For emissions of nitrogen dioxide, assume a degree of conversion to nitrogen dioxide of 60 percent. That means that the emission stream of nitrogen monoxide is to be multiplied by a factor of 0.92 and used in the nomograph as the emission stream Q of nitrogen dioxide.

S-Values

Particulates	0.2
Hydrogen Chloride (given as Cl)	0.1
Chlorine	0.15
Hydrogen fluoride and inorganic gaseous compounds of fluorine (given as F)	0.003
Carbon Monoxide	15.0
Sulfur Dioxide	0.2
Hydrogen Sulfide	0.005
Cadmium and compounds (given as Cd)	0.02
Mercury and compounds (given as Hg)	0.02
Thallium and compounds (given as Tl)	0.02

Table 1-10 (continued)

Arsenic and compounds (given as As)	0.1
Cobalt and compounds (given as Co)	0.1
Nickel and compounds (given as Ni)	0.1
Selenium and compounds (given as Se)	0.1
Tellurium and compounds (given as Te)	0.1
Antimony and compounds (given as Sb)	0.2
Lead and compounds (given as Pb)	0.2
Chromium and compounds (given as Cr)	0.2
Cyanide (easily soluble, given as CN)	0.2
Fluoride (easily soluble, given as F)	0.2
Copper and compounds (given as Cu)	0.2
Manganese and compounds (given as Mn)	0.2
Platinum and compounds (given as Pt)	0.2
Palladium and compounds (given as Pd)	0.2
Rhodium and compounds (given as Rh)	0.2
Vanadium and compounds (given as V)	0.2
Tin and compounds (given as Sn)	0.2
For the following elements:	
Lead	0.005
Cadmium	0.0005
Mercury	0.005
Thalium	0.005
Asbestos (actinolite, amosite, anthopyllite chrysotile, crocidolite, tremolite)	
Benzo(a)pyrene	0.0001
Beryllium and compounds in breathable form (given as Be)	
Dibenz(a,h)anthracene	0.0001
2-Naphthylamine	0.0001
Arsenic trioxide, arsenic pentoxide, arsenous acids and their salts (in breathable form, given as As)	0.001
Chrom(VI) compounds (in breathable form), if calcium chromate, chrom(III)-chromate, strontium chromate, and zinc chromate, given as Cr	0.001

Cobalt (in the form of breathable dusts/ aerosols of cobalt and cobalt salts of low solubility), given as Co	0.001
3,3-dichlorobenzidine	0.001
Dimethyl sulfate	0.001
Ethyleneimine	0.001
Nickel (in the form of breathable dusts/aerosols of nickel, nickel sulfide and sufidic ores, nickel oxide and nickel carbonate, nickel tetracarbonyl) given as Ni	0.001
Acrilonitrile	0.01
Benzene	0.01
1,3-Butadiene	0.01
1-Chlor-2,3-epoxypropane	0.01
1,2-Dibromomethane	0.01
1,2-Epoxypropane	0.01
Ethylene oxide	0.01
Hydrazine	0.01
Vinyl chloride	0.01
Substances in Class I Below	0.005
Substances in Class II Below	0.2
Substances in Class III Below	1.0

ORGANIC SUBSTANCES

Substance	Summation Formula	Class
Acetaldehyde	C_2H_4O	I
Acetic acid	$C_2H_4O_2$	I
Acetone	C_3H_6O	III
Acrolein	C_3H_4O	I
Acrylic acid	$C_3H_4O_2$	I
Alkyl alcohols		III
Alkyl lead compounds		I
Aniline	C_6H_7N	I
Benzyl chloride	C_7H_7Cl	I

Table 1-10 (continued)

Biphenyl	$C_{12}H_{10}$	I
2-butoxyethanol	$C_6H_{14}O_2$	II
Butyl acetate	$C_6H_{12}O_2$	III
Butyraldehyde	C_4H_8O	II
Carbon disulifide	CS_2	II
Carbon Tetrachloride	CCl_4	I
Chloroacetaldehyde	C_3H_3ClO	I
Chloroacetic acid	$C_2H_3ClO_2$	I
Chlorobenzene	C_6H_5Cl	II
Chloromethane	CH_3Cl	I
Chloroform	$CHCl_3$	I
Chloroprene	C_4H_5Cl	II
2-chloropropane	C_3H_7Cl	II
Cresols	C_7H_8O	I
Cumene	C_9H_{12}	II
Cyclohexanone	$C_6H_{10}O$	II
Diacetone alcohol	$C_6H_{12}O_2$	III
Dibutyl ether	$C_8H_{18}O$	III
1,2-dichlorobenzene	$C_6H_4Cl_2$	I
1,4-dichlorobenzene	$C_6H_4Cl_2$	II
Dichlorodifluoromethane	CCl_2F_2	III
1,1-dichloroethane	$C_2H_4Cl_2$	II
1,2-dichloroethane	$C_2H_4Cl_2$	I
1,1-dichloroethylene	$C_2H_2Cl_2$	I
1,2-dichloroethylene	$C_2H_2Cl_2$	III
Dichlorophenols	$C_6H_4Cl_2O$	I
Diethanolamine	$C_4H_{11}NO_2$	II
Diethylamine	$C_4H_{11}N$	I
Diethyl ether	$C_4H_{10}O$	III
Diisobutyl ketone	$C_7H_{14}O$	II
Dimethyl ether	C_2H_6O	III
nn-dimethylformamide	C_3H_7NO	II
Dioctylphthlate	$C_{24}H_{38}O_4$	II
1,4-dioxan	$C_4H_8O_2$	I
Diphenyl	See Biphenyl	
Ethanol	See Alkyl alcohols	
Ether	See Diethyl ether	
2-ethoxyethanol	$C_4H_{10}O_2$	II
Ethyl acetate	$C_4H_{10}O_2$	II
Ethyl acrylate	C_5H_8O	I
Ethyl amine	C_2H_7N	I
Ethyl benzene	C_8H_{10}	II
Ethyl chloride	C_2H_5Cl	III
Ethylene glycol	$C_2H_6O_2$	III
Isopropenyl benzene	C_9H_{10}	II

Table 1-10 (continued)

Isopropyl benzene	C_9H_{12}	II
Isopropyl ether	$C_6H_{14}O$	III
Formaldehyde	CH_2O	I
Formic acid	CH_2O_2	I
Furfural	$C_5H_4O_2$	I
Furfurol	See Furfural	
Glycol	See Ethylene glycol	
Maleic anhydride	$C_6H_2O_3$	I
Mercaptans		I
Methanol	See Alkyl alcohols	
2-methoxyethanol	$C_3HH_8O_2$	II
Methyl acetate	$C_3H_6O_2$	II
Methyl acrylate	$C_4H_6O_2$	I
Methylamine	CH_5N	I
Methyl benzoate	$C_8H_8O_2$	III
Methyl cyclohexanone	$C_7H_{12}O$	II
Methyl ethyl ketone	C_4H_8O	III
Methyl formate	$C_2H_4O_2$	II
Methyl isobutyl ketone	$C_6H_{12}O$	III
Methyl methacrylate	$C_5H_8O_2$	II
4-methyl-m-phenyl-endiisocyanate	$C_9H_6N_2O$	I
n-methylpyrrolidone	C_5H_9NO	III
Methylene chloride	CH_2Cl_2	III
Naphthaline	$C_{10}H_8$	IIo
Nitrobenzene	$C_6H_5NO_2$	I
Nitrocresols	$C_7H_7NO_3$	I
Nitrophenols	$C_6H_5NO_3$	I
Nitrotoluenes	$C_7H_7NO_2$	I
Olefins (other than 1,3-butadiene)		III
Paraffins (other than methane)		III
Perchloroethylene	See Tetrachloroethylene	
Phenol	C_6H_6O	I
Pinenes	$C_{10}H_{16}$	III
Propionaldehyde	C_3H_6O	II
Propionic acid	$C_3H_6O_2$	II
Pseudocumene	C_9H_{12}	II
Pyridine	C_5H_5N	I
Styrene	C_8H_8	II
1,1,2,2-tetrachloroethane	$C_2H_2Cl_4$	I
Tetrachloroethylene	C_2Cl_4	II
Tetrahydrofuran	C_4H_8O	II
Thioether		I
α-toluidine		I
Toluene	C_7H_8	II
1,1,1-trichloroethane	$C_2H_3Cl_3$	II

Table 1-10 (continued)

1,1,2-trichloroethane	$C_2H_3Cl_3$	I
Trichloroethylene	C_2HCl_3	II
Trichlorofluoromethane	CCl_3F	III
Trichlorophenols	$C_6H_5OCl_3$	I
Triethylamine	$C_6H_{15}N$	I
Vinyl acetate	$C_6H_6O_2$	I
Wood dust (breathable)		I
Xylenols (other than 2,4-xylenol)	$C_8H_{10}O$	I
2,4-xylenol	$C_8H_{10}O$	II
Xylenes	C_8H_{10}	II

Table 1-11

Fuels that may be used in Small Furnaces

1. Bituminous coal, but not carbonized bituminous coal nor hard coal briquettes for which pitch has been used as a binder

2. Ligneous coal, ligneous coal briquettes, carbonized ligneous coal

3. Peat briquettes, peat

4. Cut pieces of untreated wood, including the attached bark, i.e., in the form of chopped wood, pieces left over from chopping (Holzschnitzeln), and brushwood and cones

5. Untreated wood that is not in pieces, such as sawdust, chips or shavings, wheel swarf, or bark

6. Coated, lacquered, or laminated wood as well as waste that from it, if no wood preservatives have been applied to it or are contained in it and if the coatings do not consist of halogenated organic compounds

7. Plywood, chip or particle board, fiber plates, or other bonded woods as well as waste from it, if no wood preservatives have been applied to it or are contained in it and if the coatings do not consist of halogenated organic compounds

8. Straw and similar materials

9. EL fuel oil that falls under DIN 51 603 Part 1 (December 1981), and methanol or ethanol

10. Gases from the public gas supply, untreated natural gas, or petroleum gas with a similar sulfur content, and liquid petroleum gas, or hydrogen

11. Sewer gas that contains sulfur compounds up to 0.1 percent by volume, calculated as sulfur, or biogas from agriculture

12. Coke oven gas, pit gas, steel gas (Stahlgas), blast furnace gas, refinery gas, and synthetic gas that contains sulfur compounds up to 0.1 percent by volume, calculated as sulfur.

(NOTE: The percent by weight of sulfur in the combustibles in 1, 2, and 3 may not exceed 1 percent of the raw material. In the case of bituminous briquettes, this requirement is considered to have been met if an equivalent of sulfur dioxide emissions is achieved by special pretreatment. For furnaces that burn ligneous coal briquettes and/or hard coal briquettes for which pitch has been used as a binder, these requirements do not take effect until the end of a 4 yr period after 1 January 1991.)

(NOTE: The combustibles listed in numbers 4 through 8 above may be used in hand-fired furnaces only after having been air-dried.)

(NOTE: The combustibles listed in numbers 6 and 7 may be used only in furnaces that have a nominal thermal output of at least 50 kW, and then only in concerns devoted to the processing or treatment of wood.)

(NOTE: Nominal thermal output is often given in kcal/h. The following table of approximate equivalents will be useful:

- 4 kW is approximately equal to 3439 kcal/h
- 11 kW is approximately equal to 9458 kcal/h
- 22 kW is approximately equal to 18,917 kcal/h
- 25 kW is approximately equal to 21,496 kcal/h
- 28 kW is approximately equal to 24,076 kcal/h
- 50 kW is approximately equal to 42,992 kcal/h
- 120 kW is approximately equal to 103,181 kcal/h.)

Table 1-12

Limit Values for Waste Gas Loss in Small Oil or Gas Furnaces

Nominal Thermal Output in kW	Installed on or before 31 December 1982	Installed on or after 1 January 1983	Installed or substantially modified on or after 1 October 1988
More than 4 but no more than 25	15	14	12
More than 25 but no more than 50	14	13	11
More than 50	13	12	10

Table 1-13

Emission Limit Values for Incinerators

Chart One

Pollutant	Daily Average Value mg/m^3	Half-Hourly Average Value mg/m^3
Total Particulates	10	30
Organic substances (given as total carbon)	10	20
Gaseous inorganic chlorine compounds (given as hydrogen chloride)	10	60
Gaseous inorganic fluorine compounds (given as hydrogen fluoride)	1	4
Gaseous inorganic sulfur trioxide (given as sulfur dioxide)	50	
Sulfur dioxide & trioxide (given as sulfur dioxide)		0.20
Nitrogen monoxide & dioxide		

(NOTE: All values are relative to an oxygen content of 11 percent, unless only waste oil (See definition.) is burned. In that case, the values are relative to an oxygen content of 3 percent.)

Chart Two

No total of average values for each of the following groups of substances (regardless of the length of the sampling period) may exceed the amount indicated.

(NOTE: All values are relative to an oxygen content of 11 percent, unless only waste oil (See definition.) is burned. In that case, the values are relative to an oxygen content of 3 percent.)

(NOTE: The length of the sampling period should be at least one half hour and no more than 2 h.)

Pollutant	Limit Value for Total of Average Values within each group mg/m^3
Cadmium and its compounds (given as Cd)	
Thallium and its compounds (given as Tl)	0.05
Lead and its compounds (given as Hg)	0.05
Antinomy and its compounds (given as Sb)	
Arsenic and its compounds (given as As)	
Lead and its compounds (given as Pb)	
Chromium and its compounds (given as Cr)	
Cobalt and its compounds (given as Co)	
Copper and its compounds (given as Cu)	

Manganese and its compounds
(given as Mn)

Nickel and its compounds
(given as Ni)

Vanadium and its compounds
(given as V)

Tin and its compounds
(given as Sn)

(NOTE: Compliance is considered to have been achieved if no individual measurement exceeds the relevant average value.)

Chart Three

No average value for the following dioxins and furans (regardless of the length of the sampling period) may exceed a sum total of 0.1 ng/m^3, when calculated by summing the concentrations of the substances after having multiplied them by the equivalence factors indicated in the Chart.

(NOTE: All values are relative to an oxygen content of 11 percent, unless only waste oil (See definition.) is burned. In that case, the values are relative to an oxygen content of 3 percent.)

(NOTE: The length of the sampling period should be at least 6 h and no more than 16 h.)

Substance	Equivalence Factor
2,3,7,8-tetrachlorodibenzodioxin (TCDD)	1
1,2,3,7,8-pentachlorodibenzodioxin (PeCDD)	0.5
1,2,3,4,7,8-hexachlorodibenzodioxin (HxCDD)	0.1
1,2,3,7,8,9-hexachlorodibenzodioxin (HxCDD)	0.1
1,2,3,6,7,8-hexachlorodibenzodioxin (HxCDD)	0.1
1,2,3,4,6,7,8-Heptachlorodibenzodioxin (HpCDD)	0.01

Table 1-13 (continued)

Substance	Equivalence Factor
Octachlorodibenzodioxin (OCDD)	0.001
2,3,7,8-tetrachlorodibenzofuran (TCDF)	0.1
2,3,4,7,8-pentachlorodibenzofuran (PeCDF)	0.5
1,2,3,7,8-pentachlorodibenzofuran (PeCDF)	0.05
1,2,3,4,7,8-hexachlorodibenzofuran (HxCDF)	0.1
1,2,3,7,8,9-hexachlorodibenzofuran (HxCDF)	0.1
1,2,3,6,7,8-hexachlorodibenzofuran (HxCDF)	0.1
2,3,4,6,7,8-hexachlorodibenzofuran (HxCDF)	0.1
1,2,3,4,6,7,8-heptachlorodibenzofuran (HpCDF)	0.01
1,2,3,4,7,8,9-heptachlorodibenzofuran (HpCDF)	0.01
Octachlorodibenzofuran	0.001

(NOTE: Emission limit values are considered to have been complied with if no daily average value exceeds the given limit, if no hourly average value exceeds the given limit, if no half-hourly average value exceeds the limit and if the peak concentration of nitrogen monoxide are not exceed.)

INSTALLATION:	COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT German	DATE:	REVIEWER(S):

STATUS NA C RMA	REVIEWER COMMENTS:

(1) BCE (Base Civil Engineering/Environmental Planning) (2) BEE (Bioenvironmental Engineering) (3) Air Pollution Source Operator (4) Fuels - Management Branch (5) Transportation - Maintenance Branch (6) LGS (Base Supply) (7) MWR (Morale, Welfare, and Recreation) Auto Hobby Shop (8) Refrigeration Shops (BCE) (9) Equipment Maintenance Squadron (10) AAFES (Army/Air Force Exchange Service) Gas Station

Section 2

Hazardous Material Management

Section 2

HAZARDOUS MATERIALS MANAGEMENT

A. Applicablility

In carrying out its mission on German soil the United States Air Force necessarily makes use of substances that are considered hazardous by the government of the Federal Republic. Therefore this section of the manual applies to all installations.

B. National Laws and Regulations

There is no single German legislative instrument that contains all regulations related to hazardous substances. Rather, there are six acts that bear the main burden of regulating issues related to hazardous substances in the Federal Republic of Germany.

- The **Verordnung ueber gefaehrliche Stoffe** (Hazardous Substances Ordinance (GefStoffV)) has to do with the production and marketing of hazardous substances, but it also includes in its scope substantive regulations on such topics as storage, labelling, product substitution, training of employees, and some requirements related to the physical character of facilities.

- The **4. Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung ueber genehmigungsbeduerftige Anlagen -- 4. BImSchV)** (The 4th Regulation Implementing the Federal Immission Control Act (Regulation on Facilities that Require Permits)) establishes a class of facilities that require permits under the Federal Immission Control Act (BImSchG). The facilities listed in 4. BImSchV as being subject to permit requirements may also be subject to further requirements under other laws or regulations.

- The **12. Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Stoerfall-Verordnung -- 12. BImSchV)** (The 12th Regulation Implementing the Federal Immission Control Act (Incidents Ordinance) includes in its scope substantive regulations relating to incidents, the prevention of them, and responses to them.

- The **Gesetz zum Schutz vor gefaehrlichen Stoffen (Chemikaliengesetz -- ChemG)** (Act on Protection against Hazardous Substances (Chemicals Law)), though important from the point of view of general principles and the definition of concepts, contains only one substantive requirement to which medical personnel on our Air Force installations are subject.

- The **Verordnung ueber die Gefaehrlichkeitsmerkmale von Stoffen und Zubereitungen nach dem Chemikaliengesetz (Gefaehrlichkeitsmerkmaleverordnung -- ChemGefMerkV)** (Regulation on Dangerous Characteristics of Substances under the Chemicals Law) fleshes out the definitions of concepts introduced in the ChemG.

- The **Verordnung ueber Anlagen zur Lagerung, Abfuellung und Befoerderung brennbarer Fluessigkeiten zu Lande (Verordnung ueber brennbare Fluessigkeiten -- VbF)** (Regulation on Facilities for the Storage, Filling, and Transfer of Combustible Liquids on Land) regulates many aspects of the storage and handling of combustible liquids.

  There are also a number of relatively more minor pieces of legislation to which our installations are subject.

- The **Verordnung zur Beschraenkung des Herstellens, des Inverkehrbringens und der Verwendung von Teeroelen zum Holzschutz (Teeroelverordnung -- TeeroelV)** (Ordinance Establishing Limits on the Production, Marketing, and Use of Tar Oils as Wood Preservatives (Tar Oil Ordinance)) regulates the production, marketing, and use of tar oils as wood preservatives.

- The **1. Verordnung zum Schutz des Verbrauchers vor bestimmten aliphatischen Chlorkohlenwasserstoffen (1. Chloraliphatenverordnung -- 1. aCKW-V)** (First Ordinance Protecting the Consumer from Certain Aliphatic Chlorinated Hydrocarbons) severely restricts the use of carbon tetrachloride and certain other chlorinated hydrocarbons in areas that are not used for commercial/industrial purposes.

- The **Verordnung ueber Gashochdruckleitungen** (Regulation on High-pressure Lines for Gases) contains provisions relevant to lines used for combustible, toxic, or irritant gases.

- The **Gesetz ueber die Umweltvertraeglichkeitspruefung (UVPG)** (Environmental Impact Statement Act) requires that environmental impact studies be done prior to the construction of or substantial modification to certain types of facilities under certain conditions. US forces in Germany are permitted to substitute an environmental review for full-blown environmental impact statements.

- The **Gesetz zur Ordnung des Wasserhaushalts (Wasserhaushaltsgesetz -- WHG)** (Water Resources Management Act (Water Resources Act), in addition, establishes a class of substances that are considered to be harmful to water. Hazardous substances that are or contain substances harmful to water require special treatment under the WHG. These substances are covered in Section 8 (*POL*) of this manual.

C. State Laws and Regulations -- Rheinland-Pfalz

- The **Landesbauordnung Rheinland-Pfalz (LBauO)** (State Building Ordinance for Rheinland-Pfalz) contains a number of provisions related to the storage of combustible gases and liquids.

- The **Landesverordnung ueber den Bau und Betrieb von Garagen und Stellplaetzen (Garagenverordnung -- GarVO)** (State Regulation on the Building and Operation of Garages and Parking Spaces) contains some regulations relevant to hazardous materials also.

D. Key Compliance Definitions

- *Aboveground Tanks* - all permanent tanks that are not underground storage tanks (VbF, Appendix II, 120.1(2)).

- *Airfield Tank Trucks* - tank trucks intended to be used only for filling aircraft with fuel (VbF, Appendix II, 141.1(4)).

- *Airfield Tanking Stations* - facilities and areas on airfields in which the fuel containers of aircraft are filled from hydrants or aircraft tank trucks (VbF, Appendix II, 111.(3)).

- *BAT* - Biological Workplace Tolerance Value (German: biologischer Arbeitsplatztoleranzwert), abbreviated BAT, is the concentration of a substance, or of the products of its transformation, in the body at which in general the health of the employees is not impaired. It may also be defined as the deviation of a biological indicator from the norm that is caused by a substance or by the products of its transformation (GefStoffV, Section 15(5)).

- *Breakable Containers* - those made of glass, porcelain, stoneware, or that sort of material, that under traffic law may be transported only in protective packaging (VbF, Appendix II, 143.1(3)).

- *Carcinogenic* - substances or preparations that can cause cancer or increase the frequency of its occurrence when they are inhaled, ingested, or absorbed via the skin are considered carcinogenic (ChemGefMerkV, Section 1(12)).

- *Chronically Harmful* - if substances or preparations cause severe damage to health when one is exposed to them repeatedly or for more extended periods of time, but are not carcinogenic, mutagenic, or teratogenic, they are considered to be chronically harmful (ChemGefMerkV, Section 1(15)).

- *Combustible Liquids* - substances with a flashpoint that are either solid or unctuous at 35 °C, that have a vapor pressure of 3 bar or less at 50 °C, and that belong to one of the following Dangerous-Materials Classes:
  - Dangerous-Materials Class A: liquids that have an flashpoint no greater than 100 °C, that do not exhibit the properties of Group B with regard to solubility, and that belong to one of the following subgroups:
    - Dangerous-Materials Class AI: liquids that have a flashpoint lower than 21 °C; typical members of this class are the following:

      i-pentane
      Methyl formate
      Furan
      Isoprene
      Diethyl ether
      n-pentane
      Vinyl ether
      Nickel carbonyl
      Allyl chloride
      Carbon disulfide
      Cyclopentane
      Acetyl chloride
      Acrolein
      n-hexane
      di-i-propyl ether
      Vinyl acetate
      Acrylonitrile
      Ethyl acetate
      Benzene
      Methyl acrylate
      Methyl ethyl ketone
      Cyclohexane
      1,2-dichloroethane
      n-heptane
      Methyl methacrylate
      Toluene
      n-octane
      Ethyl benzene
      Petroleum ether

- Dangerous-Materials Class AII: liquids that have a flashpoint from 21 °dC to 55 °C; typical members of this class are the following:
    - Nitromethane
    - Epichlorohydrin
    - n-butanol
    - n-butyl acetate
    - n-amyl alcohol (primary)
    - Chlorobenzene
    - m-xylene
    - Acetic anhydride
    - Styrene
    - n-amyl acetate
    - n-nonane
    - alpha-pinene
    - Cyclohexanone
    - Ethylene glycol diacetate
    - 2-methyl cyclohexanone
    - n-decane
    - Solvent naphtha (DIN 51 632)
- Dangerous-Materials Class AIII: liquids that have a flashpoint from 55 °C to 100 °C; typical members of this class are the following:
    - Cyclohexanol
    - 2-methyl cyclohexanol
    - Benzyl chloride
    - Aniline
    - o-cresol
    - Benzoyl chloride
    - o-toluidine
    - m-cresol
    - Tetrahydronaphthalene
    - Mononitrobenzene

- Dangerous-Materials Class B: liquids with a flashpoint under 21 °C that dissolve in water at 15 °C or the combustible liquid constituents of which dissolve in water at 15 °C; typical members of this class are the following:
    - Acetaldehyde
    - Hydrocyanic acid
    - Ethyleneimine
    - Acetone
    - Tetrahydrofuran
    - Methanol
    - Ethanol (100 percent)
    - Ethanol (96 percent)

Ethanol (82 percent)
Ethanol (75 percent)
Ethanol (70 percent)
Acetonitrile
i-propyl alcohol
tert-butanol
Dioxan
Piperidine
Pyridine
(VbF, Section 3(1)).

(NOTE: Combustible liquids that belong to Dangerous-Materials Class AIII that have been to heated to a point at or above their flashpoint are considered the same as combustible liquids in Class AI.)

- *Connecting Lines* - pipelines for combustible liquids that extend beyond the boundaries of the installation and connect facilities that are in close spatial and operational relationship with one another (VbF, Appendix II, 132.1).

- *Corrosive* - substances and preparations are considered corrosive if they can destroy living tissues on contact (ChemGefMerkV, Section 1(9)).

- *Emptying Stations* - facilities or areas that are intended to serve as a place where transport containers that are filled with combustible liquids are emptied (VbF, Appendix II, 111.1(2)).

- *Explosion Zones* - areas which, because of their physical location or their operational role, can be sites where dangerous atmospheric conditions can arise as a result of air-vapor mixtures. Such zones are subdivided on the basis of the likelihood of such atmospheric conditions arising.
  - Sub-zone 0 includes those areas in which dangerous atmospheric conditions that could give rise to an explosion are to be found constantly or for long periods of time
  - Sub-zone 1 includes those areas in which there is likelihood that dangerous atmospheric conditions that could give rise to an explosion are to be found occasionally
  - Sub-zone 2 includes areas in which there is likelihood that dangerous atmospheric conditions that could give rise to an explosion are to be found infrequently, and then only for short periods of time

  (VbF, Appendix II, 100.2).

- *Explosive* - substances and preparations are considered explosive if flames can cause them to explode or if they are more sensitive to impact or friction than dinitrobenzene (ChemGefMerkV, Section 1(1)).

- *Extremely Flammable* - substances or preparations that have flash points under 0 ^{o}C and boiling points no higher than 35 ^{o}C when in the liquid state (ChemGef-MerkV, Section 1(3)).

- *Filling Stations* - permanent facilities that are intended to serve as a place where transport containers are filled with combustible liquids (VbF, Appendix II, 111.1(1)).

- *Flammable* - substances or preparations that have a flash point from 21 ^{o}C to 55 ^{o}C (inclusive) when in the liquid state (ChemGefMerkV, Section 1(5)).

- *Harmful* - those substances and preparations are considered harmful for which there exists information or even a suspicion grounded in state-of-the-art scientific knowledge that indicates that they are carcinogenic, teratogenic, or mutagenic (ChemG Section 3a(3)). Also included are those substances or preparations that can cause death or acute or chronic health damage when inhaled, ingested, or absorbed via the skin (ChemGefMerkV, Section 1(8)).

- *Hazardous* - those substances and preparations are considered hazardous that are explosive, oxidizing, extremely flammable, highly flammable, very toxic, toxic, harmful, corrosive, or irritants, or that may cause sensitization. Hazardous substances and preparations also include those that are carcinogenic, teratogenic, or mutagenic, as well as those that exhibit chronically harmful properties or that endanger the environment (ChemG, Section 3a(1)). Also considered hazardous are those substances and preparations that produce or release the foregoing substances when handled, those products during the use of which hazardous or explosive substances are produced or released, and such substances, preparations, or products that experience has shown to transmit pathogens (GefStoffV, Section 15(1)).

  (NOTE: The harmful properties of ionizing rays are specifically excluded from this definition.)

  (NOTE: Substances or preparations are considered to endanger the environment if they themselves or the products of their transformation are capable of changing the quality of the natural environment, of water, soil, or air, of animals, plants, or microorganisms in such a way that dangers to the environment arise immediately or later.)

- *Highly Flammable* - those substances or preparations are considered highly flammable if they:
  - can heat up and ultimately ignite at ordinary air temperature without additional energy being supplied,
  - are in a solid state and can be easily ignited by contact with a flame and continue to burn or glow after the flame is removed,
  - have a boiling point under 21 °C in the liquid state,
  - have a temperature range within which they explode at normal pressure in the air when in the gaseous state, or
  - produce dangerous amounts of highly flammable gases when they come into contact with water or humid air

  (ChemGefMerkV, Section 1(4)).

- *Hose Lines* - flexible lines made of nonmetallic material that are intended only for transfer processes (VbF, Appendix II, 131.1(2)).

- *Incident* - a disruption of the proper operation of a facility in the course of which a substance listed in Table 2-1 Chart III is released, produced, ignites, or explodes such that a public danger arises (Stoerfall-Verordnung, Section 2(1)).

- *Irritants* - substances or preparations are considered irritants if they can cause inflammation of the skin or of mucous membranes when they come into contact with them repeatedly, or for brief or more extended periods of time (ChemGef-MerkV, Section 1(10)).

- *Long-distance Lines* - pipelines for combustible liquides that extend beyond the boundaries of the installation and that are not connecting lines (VbF, Appendix II, 133.1).

- *MAK* - Maximal Concentration in the Workplace (German: maximale Arbeitsplatzkonzentration, abbreviated MAK) is the concentration of a substance in the air of the workplace at which the health of the employees is generally not impaired (GefStoffV, Section 15(4)).

- *Mixed Storage* - situations in which combustible liquids of Dangerous-Materials Class AIII are stored together with combustible liquids of Dangerous-Materials Classes AI, AII, or B in an aboveground outdoor storage area in a containment area or in a sub-divided tank, when such materials are located together within a room in a building, or when such materials are stored belowground in a sub-divided tank (VbF, Appendix II, 100.1(4)-(5)).

- *Mutagenic* - substances or preparations that can result in or increase the frequency of inheritable damage when inhaled, ingested, or absorbed via the skin are considered mutagenic (ChemGefMerkV, Section 1(14)).

- *Other Containers* - containers made of metal or synthetic substances that meet the mechanical, chemical, and thermal demands that can be expected to be placed on them, and that are impervious to the combustible liquids they may contain and to vapors generated by those liquids. Such containers must also be age-resistant, fireproof, and unbreakable (VbF, Appendix II, 143.1(4)).

- *Oxidizing* - substances or preparations that are not themselves combustible but that substantially increase the danger of a fire or the strength of a fire (mainly by giving off oxygen) when they come into contact with combustible substances or preparations (ChemGefMerkV, Section 1(2)).

- *Permanent Tanks* - storage containers which, given their design, are not intended to be moved from one site to another in the course of operation (VbF, Appendix II, 120.1(1)).

- *Pipeline on the Installation's Grounds* - flexible or inflexible pipelines for combustible liquids that do not extend beyond the boundaries of the installation (VbF, Appendix II, 131.1(1)).

- *Portable Containers* - transport containers without parts, such as bottles, canisters, barrels, or similar containers, that can be set in them. They are of two kinds, namely breakable containers and other containers, and they may be put to use in the storage of combustible liquids (VbF, Appendix II, 143.1(1)).

- *Preparations* - mixtures, compounds, or solutions that consist of two or more substances (ChemG, Section 3(2)). Dangerous bait for use in pest control is considered a prepartation (GefStoffV, Section 2(2)).

- *Pressure Tanks* - permanent tanks which are designed to be operated at an interior pressure higher than 0.1 bar (VbF, Appendix II, 120.1(3)).

- *Public Danger* - a danger to employees, neighbors, or the general public that arises outside the part of a facility in which an incident has occurred, if:
    1. human life is threatened or there is reason to fear that the health of human beings will be significantly impaired,
    2. the health of a large number of people could be impaired, or
    3. things of great value, such as waters, soils, stocks of animals or plants, could be harmed should a change in their numbers or their usefulness have a negative impact on the common good

  (Stoerfall-Verordnung, Section 2(2)).

- *Sensitization* - substances that may cause sensitization are those that can cause hypersensitivity reactions that are mediated by the immune system when they come into contact with the skin or are inhaled (ChemGefMerkV, Section 1(11)).

- *Street Tank Trucks* - tank trucks that are intended to be driven on public thoroughfares (VbF, Appendix II, 141.1(3)).

- *Subdivided Tanks* - tanks that are divided into parts by separating walls (VbF, Appendix II, 120.1(4)). (NOTE: Each part of a subdivided tank, including subdivided tanks on motor vehicles, counts as a tank.)

- *Substances* - chemical elements or chemical compounds, whether they occur naturally or are produced, including impurities, and the auxiliary agents necessary for them to be marketable (ChemG, Section 3(1)).

- *Tank Containers* - transport containers with a capacity of more than 450 liters (L) that are designed to be transported on motor vehicles and to be placed on or removed from them when full. They may be used for the transport of combustible liquids (VbF, Appendix II, 142.1).

- *Tank Stations* - permanent facilities where land-vehicles, watercraft, or aircraft are serviced with liquid fuel via suitable dispensing equipment; the associated storage containers are also included. Appropriate portable containers may also be filled at such sites (VbF, Appendix II, 112.1).

- *Tank Trucks* - motor vehicles whose movement is not restricted to rails, to whose chassis a tank has been attached (VbF, Appendix II, 141.1(2)).

- *Tanks on Motor-vehicles* - transport containers that are parts of motor vehicles or are transported on motor vehicles after having been positioned on them (VbF, Appendix II, 141.1(1)).

  (NOTE: Tanks that can be positioned on motor vehicles are those that have been designed to be put on or taken off of a motor vehicle only when empty. Such tanks are intended to be attached to the vehicle during filling, transfer, and emptying.)

- *Teratogenic* - substances or preparations that can result in or increase the frequency of non-inheritable damage to immediate offspring when inhaled, ingested, or absorbed via the skin are considered teratogenic (ChemGefMerkV, Section 1(13)).

- *Toxic* - substances or preparations that can cause death or acute or chronic health damage when inhaled, ingested, or absorbed via the skin in small quantities (ChemGefMerkV, Section 1(7)).

- *Trip Threshold* - (German: Ausloeseschwelle) is the concentration of a substance in the air of the workplace or in the body (cf. BAT) which, when exceeded, makes necessary additional measures for the protection of health. The trip threshold is considered to have been exceeded when processes are used during which measures for the protection of health are necessary or when direct contact with the skin occurs (GefStoffV, Section 15(7)).

- *TRK* - Technical Standard Concentration (German: technische Richtkonzentration), abbreviated TRK, is the concentration of a substance in the air of the workplace that can be achieved given the state of the art (GefStoffV, Section 15(6)).

- *Underground Tanks* - permanent tanks that are either completely or partially embedded in the ground and are set up in such a way that leaks cannot be visually detected dependably and quickly (VbF, Appendix II, 120.1(2)).

- *Vacuum-Pressure Tank Trucks* - tank trucks that are designed to transfer drilling mud, oil sludge, petroleum, or any other sort of combustible liquid including impurities or mixtures (VbF, Appendix II, 141.1(5)).

- *Very Toxic* - substances or preparations that can cause death or acute or chronic health damage when inhaled, ingested, or absorbed via the skin in very small quantities (ChemGefMerkV, Section 1(6)).

HAZARDOUS MATERIALS MANAGEMENT

GUIDANCE FOR CHECKLIST USERS

	REFER TO WORKSHEET ITEMS	CONTACT THESE PEOPLE OR GROUPS:(*)
All Installations	2-1 through 2-4	(1)(2)(4)(5)
Permitted Facilities	2-5 through 2-20	(1)(2)(3)(4)(5)(6)
Storage/Labelling	2-21 through 2-23	(1)(2)(5)(7)
Education/Training	2-24 and 2-25	(2)(4)(5)
Operations/Handling	2-26 through 2-38	(1)(2)(4)(5)(7)
Carcinogens	2-39 through 2-46	(1)(2)(4)(5)(7)
Carbon Tetrachloride, Etc.	2-47 and 2-48	(1)(2)(4)(5)(7)
Creosote	2-49 and 2-50	(1)(2)(4)(5)(7)
Lead	2-51 and 2-52	(1)(2)(4)(5)(7)
Ammonium Nitrate		
General	2-53 through 2-56	(1)(2)(4)(5)(7)
Large Quanties	2-57 through 2-61	(1)(2)(4)(5)(7)
High Pressure Gas Lines	2-62 through 2-83	(1)(2)(4)(5)(7)

(*)CONTACT/LOCATION CODE:

(1) LGS (Base Supply)
(2) BCE (Base Civil Engineering)
(3) Fire Department
(4) Safety Officer
(5) BEE (Bioenvironmental Engineering)
(6) Disaster Preparedness Office
(7) LGT (Transportation Officer)

	REFER TO WORKSHEET ITEMS	CONTACT THESE PEOPLE OR GROUPS:(*)
Flammable/Combustible liquids		
Storage Facilities for Combustible Liquids - Notification and Permits	2-84 through 2-90	(1)(2)(4)(5)(7)
Inspection	2-91 through 2-92	(1)(2)(4)(5)(7)
Incident Reporting	2-93	(1)(2)(4)(5)(7)
Dangerous Materials Classes AI, AII, or B		
General Requirements	2-94 through 2-96	(1)(2)(4)(5)(7)
Storage Areas that are not Subject to a notification requirement or permit requirements	2-97 through 2-99	(1)(2)(4)(5)(7)
Storage Areas that are Subject to a notification requirement or permit requirements	2-100 through 2-102	(1)(2)(4)(5)(7)
Additional requirements on storage rooms above and below ground level that are subject to a notification requirement or to permit requirements	2-103 through 2-107	(1)(2)(4)(5)(7)

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	REFER TO WORKSHEET ITEMS	CONTACT THESE PEOPLE OR GROUPS:(*)
Additional requirements on outdoor storage in aboveground containers that is subject to a notification requirement or to permit requirements	2-108 through 2-110	(1)(2)(4)(5)(7)
Filling Stations in Rooms	2-111 through 2-114	(1)(2)(4)(5)(7)
General Provisions for Permanent Tanks (Metal or Non-Metal)	2-115 through 2-126	(1)(2)(4)(5)(7)
Additional Provisions for Permant Tanks (Metal or Non-Metal) with Interior Overpressure	2-127 through 2-130	(1)(2)(4)(5)(7)
Metal Permanent Tanks	2-131 and 2-132	(1)(2)(4)(5)(7)
Portable Containers	2-133 and 2-134	(1)(2)(4)(5)(7)

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HAZARDOUS MATERIALS MANAGEMENT

GUIDANCE FOR CHECKLIST USERS
(Continued)

	REFER TO WORKSHEET ITEMS	CONTACT THESE PEOPLE OR GROUPS:(*)
Operational Requirements	1-135 through 2-136	(1)(2)(4)(5)(7)
Operational Requirements for Containers	2-137 through 2-143	(1)(2)(4)(5)(7)
Dangerous Materials Class AIII	2-144 through 2-153	(1)(2)(4)(5)(7)
General Requirements		
Rheinland-Pfalz Hazardous Substances	2-154 through 2-157	(1)(2)(4)(5)(7)

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HAZARDOUS MATERIALS MANAGEMENT

Records to Review

- Spill Control and Contingency Plan
- Emergency Plan documents
- Material Safety Data Sheets
- Inventory records
- Training records
- Inspection records
- Shipping papers
- Placarding of hazardous materials

Physical Features to Inspect

- Hazardous materials storage areas
- Shop activities
- Shipping and receiving area

Sources to Interview

- BCE (Base Civil Engineering)
- LGS (Base Supply)
- Fire Department
- BEE (Bioenvironmental Engineering)
- Safety Manager
- LGT (Transportation Officer)
- Disaster Preparedness Office

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL INSTALLATIONS	
2-1. Determine actions or changes since previous review of hazardous materials management (GMP).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report. (2)
...	...
2-2. Installations should maintain a file of German laws and regulations pertaining to hazardous materials management (GMP).	Verify that copies of the following federal laws and regulations are kept at the installation: (2) - *Verordnung ueber gefaehrliche Stoffe (GefStoffV)* - *4. Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung ueber genehmigungsbeduerftige Anlagen -- 4. BImSchV)* - *12. Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Stoerfall-Verordnung -- 12. BImSchV)* - *Verordnung ueber Anlagen zur Lagerung, Abfuellung und Befoerderung brennbarer Fluessigkeiten zu Lande (Verordnung ueber brennbare Fluessigkeiten -- VbF)* - *Verordnung ueber die innerstaatliche und grenzueberschreitende Befoerderung gefaehrlicher Gueter auf Strassen (Gefahrgutverordnung Strasse -- GGVS)* - *Gesetz zum Schutz vor gefaehrlichen Stoffen (Chemikaliengesetz -- ChemG)* - *Verordnung ueber die Gefaehrlichkeitsmerkmale von Stoffen und Zubereitungen nach dem Chemikaliengesetz (Gefaehrlichkeitsmerkmaleverordnung -- ChemGefMerkV)* - *Verordnung zur Beschraenkung des Herstellens, des Inverkehrbringens und der Verwendung von Teeroelen zum Holzschutz (Teeroelverordnung -- TeeroelV)* - *1. Verordnung zum Schutz des Verbrauchers vor bestimmten aliphatischen Chlorkohlwasserstoffen (1. Chloraliphatenverordnung -- 1. aCKW-V)* - *Verordnung ueber Gashochdruckleitungen* - *Gesetz ueber die Umweltvertraeglichkeitspruefung (UVPG).* Verify that copies of the following state laws and regulations for Rheinland-Pfalz are kept at the installation if appropriate: - *Landesbauordnung Rheinland-Pfalz* - *Landesverordnung ueber den Bau und Betrieb von Garagen und Stellplaetzen (Garagenverordnung).*
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-3. If substances or preparations are available that have lower health risks, and if it is feasible to use these substances or preparations, then they must be used (GefStoffV, Section 16(2)).	Determine if Base Supply has identified available product substitutions for hazardous materials in use on the installation. (1)(5) Verify that substitutable products are used where feasible.
...	...
2-4. An environmental review must be filed prior to construction of or substantial modification to certain facilities (UVPG, Section 3(1)).	Verify that an environmental review is filed prior to the construction of or substantial modification to the following facilities: (1)(2)(4)(5) - Facilities for the production, working, processing, recovery, or destruction of substances that might explode that are intended for use as explosives, detonators, propellants, or pyrotechnical charges; facilities that are intended for the production of such materials. Also included are facilities for the loading, unloading, or defusing of munitions or other explosives, with the exception of facilities for the production of matches.
...	...
PERMITTED FACILITIES	
2-5. Facilities that are listed in Table 1-1 in (*Air Emissions Management*) and in which the substances listed in Table 2-1 Chart III are present or may be produced in the event of an incident must meet certain requirements for preventing incidents (Stoerfall-Verordnung, Section 4).	Determine if the facility is listed in Table 1-1 in (*Air Emissions Management*) and if the substances listed in Table 2-1 Chart III are present or may be produced in the event of an incident. (2)(3)(4)(5) Verify that the facility is designed in such a way that it will meet the demands placed on it by an incident. Verify that measures have been taken to avoid fires and explosions in the facility. Verify that measures have been taken that will prevent fires and explosions outside the facility from affecting the safety of the inside of the facility. Verify that the facility has adequate warning systems, alarm systems, and safety equipment. Verify that adequate numbers of appropriate and dependable monitoring, control, and regulating devices that are different from one another and independent of each other are present in the facility. Verify that unauthorized parties cannot gain access to those parts of the facility that are important from the point of view of safety concerns.
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-6. Facilities must meet certain requirements for limiting the effects of incidents (Stoerfall-Verordnung, Section 5).	Verify that the design of the facility's foundations and of its load-bearing members does not increase the dangers that arise as a result of an incident. (2)(3)(4)(5)(6) Verify that the facility has the necessary safety equipment. (NOTE: What is necessary is not defined in the ordinance.) Verify that the necessary technical and organizational safety precautions have been taken. (NOTE: What is necessary is not defined in the ordinance.) Verify that emergency plans and danger-prevention plans are in place that are agreeable to the authorities competent for disaster control and the general prevention of danger.
...	...
2-7. If ordered to do so by the competent authority, facilities must also set up and maintain a channel of communication to an agency (named by the authority) that is appropriate for passing on information (Stoerfall-Verordnung, Section 5(1)(4)).	Determine if the facility has been ordered to set up such a channel of communication. (2)(3)(4)(5)(6) Verify that such a channel exists, that it is available at all times, and that it is secured against misuse.
...	...
2-8. A person must be assigned to be responsible for limiting the effects of incidents, and the competent authority must be notified of who that person is (Stoerfall-Verordnung, Section 5(2)).	Verify that a person has been made responsible for limiting the effects of incidents. (2)(3)(4)(5)(6) Verify that the competent authority has been made aware of who that person is.
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-9. The equipment and the operation of those parts of the facility that are important from the point of view of safety concerns must be examined, supervised, and regularly serviced (Stoerfall-Verordnung, Section 6(1)(1)).	Verify that the equipment and the operation of those parts of the facility that are important from the point of view of safety concerns are examined, supervised, and regularly serviced. (2)(3)(4)(5)(6)
...	...
2-10. Such safety precautions as are necessary to avoid operating errors must be taken (Stoerfall-Verordnung, Section 6(1)(4)).	Verify that safety precautions are taken that will help in the avoidance of operating errors. (2)(3)(4)(5)(6)
...	...
2-11. Affected employees must be given appropriate training (Stoerfall-Verordnung, Section 6(1)(4-5)).	Verify that personnel are trained and provided with appropriate maintenance and safety instructions. (2)(3)(4)(5)(6) Verify the affected employees are instructed in emergency plans and in proper behavior in the event of an emergency.
...	...
2-12. Written documentation must be on hand to demonstrate that the installation has carried out its responsibilities (Stoerfall-Verordnung, Section 6(2)).	Verify that documents are on hand that show the following: (2)(3)(4)(5)(6) - that the design and operation of those parts of the facility that are important from the point of view of safety concerns have been examined - that the facility is regularly supervised and maintained insofar as safety issues are concerned - that service and repair work that is important from the point of view of safety concerns is carried out - that tests are carried out to see to it that the warning, alarm, and safety equipment are functional.
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-13. Facilities listed in Table 1-1 in (*Air Emissions Management*) that store certain substances or preparations that contain them must keep lists that meet certain requirements (Stoerfall-Verordnung, Section 6(3)).	Determine if the facility is listed in Table 1-1 in (*Air Emissions Management*) and if it stores any of the substances listed in Table 2-2 Charts II, III, or IV or preparations that contain any of those substances. (2)(3)(4)(5)(6) Verify, if the facility stores any of the substances listed in Table 2-2 Charts II, III, or IV or preparations containing them, that a list is kept that includes the following information: - the trade name of the substance or preparation - the quantity of the substance or preparation stored - the place at which the substance or preparation is stored - information as to dangerous reactions with particular chemicals that might be used to deal with the stored material in the event of an incident. (NOTE: The information that is necessary to prevent dangers occurring must also be available. The law states that safety data sheets are considered particularly important.) Verify that the above records are updated at least weekly, or sooner if substantial changes occur in what is stored.
...	...

2-14. A safety analysis must be prepared that includes certain specific information (Stoerfall-Verordnung, Section 7).	Verify that a safety analysis has been carried out that contains the following information: (2)(3)(4)(5)(6)
	
	- a description of the facility and the process carried out in it during operation. Flow charts must be included, and the characteristic features of the process must be described.
	- a description of the parts of the facility that are important from the point of view of safety concerns
	- a description of the sources of danger and of conditions in which an incident could occur
	- the chemical names, the condition, and the quantity of the following:
	  - substances that fall under Charts II and III of Table 2-2 that might be present in the facility during operation
	  - substances that fall under Charts II and III of Table 2-2 that might arise in the course of proper operation of the facility,
	  - substances that could arise in the event that the proper operation of the facility is interrupted
	  - substances that could lead to the formation of substances that are listed in Charts II and III of Table 2-2.

...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-15. The safety analysis must be consistent with the state of safety practices and must take into account substantive new knowledge that is important in evaluating dangers (Stoerfall-Verordnung, Section 8).	Verify that the safety analysis is updated to bring it into conformity with the state of safety practices and with substantive new knowledge that is important in evaluating dangers. (2)(3)(4)(5)(6)
...	...
2-16. The safety analysis must be kept secure at all times, and a copy of it must be deposited with the competent authority (Stoerfall-Verordnung, Section 9).	Verify that the safety analysis is stored securely and that a copy of it has been deposited with the proper authority. (2)(3)(4)(5)(6)
...	...

2-17. The competent authority is to be informed in certain circumstances (Stoerfall-Verordnung, Section 11(1)).	Verify that the competent authority is informed in the following circumstances: (2)(3)(4)(5)(6)
	- if an incident occurs
	- if a disruption in the proper operation of the facility occurs in which:
	  - substances in Charts II, III, or IV of Table 2-2 have caused harm outside the facility
	  - if dangers to the common good or the neighborhood cannot obviously be considered to be impossible.

...	...
2-18. Reports made in the above circumstances must be confirmed in writing no later than one week after the event and must be augmented or corrected immediately if new facts come to light (Stoerfall-Verordnung, Section 11(2)).	Verify that written confirmation of reports is given no later than one week after the event. (2)(3)(4)(5)(6) Verify that reports are augmented or corrected immediately if new facts come to light.
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-19. Written confirmation of reports must include certain specific information (Stoerfall-Verordnung, Section 11(3)).	Verify that written confirmation of the occurrence of an incident includes the following information presented in such a way as to allow its implications for safety to be adequately evaluated: (2)(3)(4)(5)(6) - description of the incident - the causes of the incident - the effects of the incident - the measures that were taken to prevent the incident, to limit its effects, and to avoid recurrences. Verify that written confirmation of disruptions in the proper operation of the facility includes the following information: - a description of the circumstances presented in such a way that the safety implications of the event can be adequately evaluated - the measures that were taken to repair the damage caused by the disruption - the measures that were taken to prevent dangers from arising - the measures that were taken to prevent a repetition of similar disruptions in the proper operation of the facility. Verify that the reports include at least the information required in Chart V of Table 2-2.
...	...
2-20. Information on safety measures must be provided to persons who could be affected by an incident and to the general public, and that information must be presented in a comprehensible fashion. The information must include that listed in Chart VI of Table 2-2 and must be updated at appropriate intervals (Stoerfall-Verordnung, Section 11a).	Verify that information on safety measures to be taken and on proper behavior in the event of an incident is provided to the persons who could be affected by it and to the general public. (2)(3)(4)(5)(6) Verify that the information given includes what is required and that the information is updated at appropriate intervals.
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
STORAGE / LABELLING	(NOTE: Substances designated "harmful to water," a category that includes both some hazardous substances and POLs, are subject to regulation under a number of federal and state laws and/or ordinances. See Section 8.)
2-21. Containers into which hazardous materials are transferred must be labelled like the original container (GefStoffV, Section 23).	Verify that containers into which hazardous materials are transferred are labelled like the original container. (1)(2)(5)(7)
...	...
2-22. Containers that are firmly attached to the ground are to be labelled in a certain fashion (GefStoffV, Section 23(3)).	Verify that containers that are firmly attached to the ground are labelled with at least the name of the substance or preparation they contain and with the appropriate danger symbol. (1)(2)(5)(7)
...	...
2-23. Storage of hazardous materials must meet certain requirements (GefStoffV, Section 24).	Verify that hazardous materials are kept or stored in such a way that neither human health nor the environment is harmed. (1)(2)(5)(7) Verify that measures are taken that will prevent misuse of the materials and using them by mistake. Verify, when hazardous materials are stored so as to be dispensed or used immediately, that the dangers associated with use are made clear and obvious. Verify that hazardous materials are not stored in containers that can be confused with food containers. Verify that hazardous materials are stored in a clearly organized fashion. Verify that hazardous materials are not stored in the immediate vicinity of pharmaceuticals, foodstuffs, feedstuffs, or their additives. Verify that the hazardous materials in Chart 6 of Table 2-1 that have C, Xn, or Xi in Column 10 are stored in such a way that they are not immediately accessible to people not associated with the installation. Verify that the hazardous materials in Chart 6 of Table 2-1 that have T+ or T in Column 10 and hazardous materials that are highly toxic or toxic are stored under lock and key or in such a way that only competent persons or their agents have access to them. (NOTE: This does not apply to fuel in gas stations.)
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
EDUCATION / TRAINING	
2-24. Installations must produce informational brochures that meet certain requirements (GefStoffV, Section 20(1)).	Verify that readily understandable informational brochures have been produced in the language of the employees. (2)(4)(5) Verify that such brochures cover the following topics: - dangers to human health and environment posed by materials - safety precautions and proper procedures for handling materials - proper disposal of waste materials that are themselves hazardous - proper procedures in the event of accidents or emergencies - first aid instructions. Verify that such brochures are readily available in the workplace.
...	...
2-25. Employees who handle hazardous materials must receive training that meets certain requirements (GefStoffV, Section 20(2)).	Verify that employees who handle hazardous materials are instructed (using informational brochures) as to the dangers posed by those materials and in necessary safety precautions. (2)(4)(5) Verify that women of child-bearing age are informed of possible dangers to pregnant women and of limitations on the kinds of work that they can be asked to do. Verify that shop-specific, oral instruction takes place before employment starts and at least once a year after that. Verify that written records are kept regarding the timing and content of such instruction and that employees have acknowledged receipt of such instruction by signature.
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
OPERATIONS / HANDLING	
2-26. If possible given the state of the art, the work process is to be arranged in such a way that solid or liquid hazardous materials do not come into contact with employees' skin (GefStoffV, Section 19(1)).	Verify that the work process is so arranged. (1)(2)(4)(5)(7)
...	...
2-27. If it is determined that the MAK or the BAT is exceeded in the workplace, or in cases of allergic reaction, the installation must take certain measures (GefStoffV, Section 19(4)).	Determine whether or not the MAK or the BAT is exceeded and/or whether allergic reactions are occurring. (1)(2)(4)(5)(7) Verify, if the MAK or the BAT has been exceeded, or if allergic reactions are occurring, that appropriate personal protective equipment is provided and maintained in good condition. Verify that employees work only as long as is absolutely necessary given the particular work process and only as long as is consistent with the protection of their health. (NOTE: Protective breathing apparatuses and the wearing of full suits of protective clothing may not serve as on-going protective measures.)
...	...
2-28. Certain hygenic measures must be taken in the interest of protecting employees (GefStoffV, Section 22).	Verify that food stuffs and tobacco products intended for the use of workers are stored only in such a way that they do not come into contact with hazardous materials. (1)(2)(4)(5)(7) Verify that employees who work with highly toxic, toxic, carcinogenic, teratogenic, or mutagenic substances do not eat, drink, smoke, or take snuff in their work areas. (NOTE: Areas suitable for these activities must be provided.)
...	...
2-29. Certain hygenic measures are required for persons who work with highly toxic, toxic, carcinogenic, teratogenic, or mutagenic substances (GefStoffV, Section 22(3)).	Verify that cleanup rooms with showers and rooms with separate storage facilities for street- and work-clothes are provided. (1)(2)(4)(5)(7) Verify that separate changing rooms for street- and work-clothes are provided that are separated by a cleanup room if this is necessary. Verify that work- and protective clothing are provided, cleaned, and, if necessary, destroyed, by the installation.
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-30. Certain classes of persons may not be employed in handling hazardous materials under certain conditions (GefStoffV, Section 26(5, 6, 7)).	Verify that neither pregnant women nor nursing mothers are employed in handling highly toxic, toxic, or relatively less toxic substances or other substances that are chronically harmful to human beings if the trip threshold is exceeded. (1)(2)(4)(5)(7) Verify that neither pregnant women nor nursing mothers are employed in handling materials, preparations, or products that experience has shown may transmit pathogens, if these women may be exposed to the pathogens. Verify that women of child-bearing age are not employed in the handling of substances that contain lead or mercury alkyls, unless the trip threshold is not exceeded.
...	...
2-31. If the trip threshold for substances or preparations listed in Chart 5 of Table 2-1 is exceeded, employees may work at the particular site only if they have had precautionary medical examinations within the period of time listed in Chart 5 (GefStoffV, Section 28(2)).	Determine whether or not the trip threshold is being exceeded. (1)(2)(4)(5)(7) Verify, if necessary, that precautionary medical examinations have been conducted at required times. (NOTE: The installation bears the cost of these examinations.)
...	...
2-32. Initial and subsequent medical examinations must be carried out at specific times (GefStoffV, Section 29).	Verify that initial examinations are conducted prior to the beginning of employment but not more than 12 weeks before it begins. (1)(4)(5) Verify that the timing of subsequent examinations conforms with the timeframes given in Chart 5 of Table 2-1 and that they are made within the six weeks prior to the expiration of the allotted time. (NOTE: Subsequent examinations must be conducted at times earlier than those prescribed if illness or physical impairment makes it seem appropriate or if employees who suspect a causal connection between their illness and their work want to be examined.)
...	...
2-33. Physicians who conduct precautionary medical examinations must be empowered to do so by the competent authority (GefStoffV, Section 30(1)).	Verify that physicians who conduct precautionary medical examinations have permission from the competent authority to do so. (1)(4)(5)
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-34. Physicians who conduct precautionary medical examinations must meet certain requirements related to information and record-keeping (GefStoffV, Section 31).	Verify that physicians retain written records of the results of the precautionary examinations and inform their patients of those results. (1)(4)(5) Verify that physicians provide both installation and worker with attestation as to whether and to what extent the employee is suited for his/her assigned work.
...	...
2-35. Physicians who are called in to treat or to judge the consequences of an illness for which there is at least a suspicion that it may have been caused by hazardous substances, hazardous preparations, or products that contain or release hazardous substances or preparations must inform the Federal Health Office of the substance or preparation, the age and sex of the patient, the way in which the patient was exposed to the substance or preparation, how much was ingested, and of the observed symptoms (ChemG, Section 16e).	Verify that physicians who are called in to treat or to judge the consequences of an illness for which there is at least a suspicion that it may have been caused by hazardous substances, hazardous preparations, or products that contain or release hazardous substances or preparations inform the Federal Health Office of the substance or preparation, the age and sex of the patient, the way in which the patient was exposed to the substance or preparation, how much was ingested, and of the observed symptoms. (1)(4)(5) (NOTE: The anonymity of the patient must be preserved.)
...	...
2-36. The physician has certain responsibilities in the event that there is cause for concern as to the worker's health (GefStoffV, Section 31(3)).	Verify that the installation receives a written recommendation that his/her facility be checked if the employee who was examined appears to have been endangered as a result of working conditions. (1)(4)(5) Verify that the patient receives written medical advice from the physician.
...	...
2-37. The installation has certain responsibilities in the event that the physician has recommended that a facility be checked (GefStoffV, Section 33)).	Verify that the installation employs or re-employs the patient at his/her workplace only if measures taken as a result of the check are successful and no further cause for concern regarding the employee's health exists. (1)(4)(5) Verify that other employees work at that site only if it is certain that their health is not endangered.
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-38. Installations must keep records regarding the examination of their workers' health (GefStoffV, Section 34).	Verify that records are kept that include the following information: (1)(4)(5) - given name, surname, date of birth - home address - date on which employment began/ended - employee number (Ordnungsnummer) - employee's insurance carrier - types of possible hazards in the workplace - type of work, including the time it starts and ends - information as to the times of earlier work that might have been dangerous (if known) - date and results of precautionary examinations - date of the next regular subsequent examination - name and address of the physician who performs the examination - name of the person responsible for keeping these records. Verify that the above records and the physician's attestations for every worker are kept until such time as the worker leaves the organization's employ. Verify that the worker receives excerpts from the records that relate to her/him and of the physician's attestations, and that the installation keeps copies of the excerpts given to the worker. Verify that access to these records is restricted to authorized persons and that the contents of the records are not revealed to unauthorized third parties.
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
CARCINOGENS	
2-39. Certain requirements must be met when dealing with the carcinogenic substances listed in Table 2-1 Chart III (Appendix II to GefStoffV, 1.2).	(NOTE: These requirements do not apply if the substances are used or produced for purposes of research, in order to test their properties, or as substances used for comparison with other substances in the course of experiments.) Verify that the competent authority is informed immediately (no later than 14 days before the beginning of the production or use) of the following: (1)(2)(4)(5)(7) - a production process in which a carcinogenic substance occurs that is listed in both Group I and in Groups II and III or that is listed in both Groups II and III of Table 2-1 Chart III - the use of a carcinogenic substance that is listed in Group I and in Groups II and III of Table 2-1 Chart III. Verify that the official notification includes at least the following information: - the properties and the amount of the carcinogenic substance - the production process or the activity being carried out - precautionary measures - the number of employees who deal with the carcinogen - the substances, preparations, and/or products that result - the availability of substitutable products, or a determination as to whether the process can be changed so that the carcinogen need not be used or whether the production of the carcinogen can be prevented. Verify that the official notification contains proof that the personnel and the equipment used are appropriate to the task when existing facilities or equipment are being demolished or cleaned up, if that facility or equipment contains carcinogenic substances that belong to Groups I, II, and III.
...	...
2-40. The official notification must be resubmitted under certain circumstances (Appendix II, GefStoffV, 1.2.2(4)).	Verify that the official notification is resubmitted: (1)(2)(4)(5)(7) - if workplaces are changed or if substantial changes occur in the production process or in the activities that are carried out - if there is substantial change in the precautionary measures that are taken or in the number of workers who deal with the carcinogen - if substantial new knowledge comes to light that affects the availability of substitutable products or prevention of the carcinogen's production. Verify that the installation brings to the attention of the affected workers copies of the official notification.
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-41. Certain air-quality issues must be addressed in areas where employees deal with carcinogens (Appendix II, GefStoffV, 1.2.3.1. and 1.2.3.2).	Verify that the Technical Guide Concentrations (TRK) are not exceeded. (1)(2)(4)(5)(7) Verify that exhaust air is removed or cleaned in such a way that no carcinogens are found in the air that other workers breath. Verify that exhaust air is recirculated to rooms in which persons work with carcinogens only if the carcinogens have been removed by officially recognized processes or equipment. Verify that workers are not exposed to carcinogenic substances that are listed in Group I, Group II, or Group III unless an official exemption has been obtained or the workers are involved in the demolition, cleanup, or maintenance of existing facilities when exposure is unavoidable given the state of the art.
...	...
2-42. If the trip threshold for carcinogens is exceeded, certain restrictions related to worker safety apply (Appendix II, GefStoffV, 1.2.3.2).	Verify that workers are not given tasks that can be expected to result in intake of carcinogens via the breathing passages or the skin unless they are provided with personal safety equipment. (1)(2)(4)(5)(7) Verify that employees do not work for more than 8 hours (h)/day and for more than 40 h/week.
...	...
2-43. Substances that contain more than 0.1 percent by weight of 2-Naphthyl amine or its salts, 4-Aminobiphenyl or its salts, benizidine or its salts, or 4-nitrodiphenyl may not be used or produced except under specific conditions (Appendix II, GefStoffV, 1.3.2).	Verify that substances that contain more the 0.1 percent by weight of 2-Naphthyl amine or its salts, 4-Aminobiphenyl or its salts, benizidine or its salts, or 4-nitrodiphenyl are not used or produced except: (1)(2)(4)(5)(7) - as part of scientific experiments and analyses - as part of activities the goal of which is proper disposal - if the substances arise in the course of a chemical reaction in a closed system and are transformed so that at the end of the reaction or the work process they are present in the final product in a concentration of less than 0.1 percent.
...	...
2-44. Hazardous materials that contain 0.1 percent or more of benzene by weight may not be used except in specific instances (Appendix II, GefStoffV, 1.3.4).	Verify that hazardous materials that contain 0.1 percent or more of benzene by weight are not used except: (1)(2)(4)(5)(7) - as fuel for combustion engines that have spark ignition - in activities the goal of which is proper disposal - in industrial processes in closed systems - as raw oil, raw benzine, and fuel components that are used in industrial processes - as part of scientific experiments or analyses.
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-45. Arsenic compounds and preparations that contain arsenic may not be used as wood protectants nor in water treatment (Appendix II, GefStoffV, 1.3.3(2)).	Verify that no arsenic compounds or preparations that contain arsenic are used as wood protectants or in water treatment on the installation. (1)(2)(4)(5)(7)
...	...
2-46. A monitoring system must be installed if concentration peaks of monomers of vinyl chloride are likely to occur, and that monitoring system must meet certain requirements (Appendix II, GefStoffV, 1.3.5.2).	Determine if concentration peaks of monomers of vinyl chloride are likely to occur. (1)(2)(4)(5)(7) Verify, in the event that concentration peaks of monomers of vinyl chloride are likely to occur, that an alarm system is installed that sounds under the following conditions: - at an hourly average concentration of 15 parts per million (ppm) - at an average concentration of 20 ppm over a 20 minute (min) period - at an average concentration of 30 ppm over a 2 min period.
...	...
CARBON TETRACHLORIDE, ETC.	
2-47. Carbon tetrachloride, 1,1,2,2- and 1,1,1,2-tetrachloroethane, pentachloroethane, and substances that contain more than 1 percent of those substances by weight may not be used, unless it is impossible for technical reasons to substitute other, less hazardous substances, preparations, or products for them (Appendix III, GefStoffV, 1.).	Verify that carbon tetrachloride, 1,1,2,2- and 1,1,1,2-tetrachloroethane, pentachloroethane, and substances that contain more than 1 percent of those substances by weight are not used on the installation, unless it is impossible for technical reasons to substitute other, less hazardous substances, preparations, or products. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-48. Certain chlorinated hydrocarbons may not be used in rooms that are used for other than commercial/ industrial purposes (1. aCKW-V, Sections 1 and 2).	Verify that none of the following substances, nor preparations or products in which they have been used as solvents, nor preparations or products that contain more than 0.01 percent of the those substances (even only as impurities) are used in rooms that are used for other than commercial/industrial purposes. (1)(2)(4)(5)(7) - Carbon tetrachloride - 1,1,2,2-tetracholorethane - 1,1,1,2-tetrachloroethane - Pentachloroethane.
...	...
CREOSOTE	
2-49. Certain wood preservatives may not be used except under certain conditions (TeeroelV, Section 3(1)).	Verify that no wood preservatives that contain creosote or components of creosote are in use on the installation unless those preservatives contain less than 5 mg/kg of benzopyrene and are used in closed facilities outside of interior rooms. (1)(2)(4)(5)(7)
...	...
2-50. The use in interior spaces of products that consist in whole or in part of wood or wood-products treated with wood preservatives that contain creosote or components of creosote is prohibited (TeeroelV, Sections 1, 2, 4).	Verify that no products that consist in whole or in part of wood or wood-products that have been treated with wood preservatives that contain creosote or components of creosote are used in interior spaces. (1)(2)(4)(5)(7) (NOTE: This provision does not apply to such products that were marketed prior to 1 February 1992.)
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
LEAD	
2-51. Hazardous materials that contain certain lead carbonates or lead sulfates may not be used as paints, except in specific circumstances (Appendix III, GefStoffV, 2.2).	Verify that no paints are used on the installation that contain the following, except in restoration work where the use of substitutes is impossible: (1)(2)(4)(5)(7) - anhydrous, inert lead carbonate (CAS No. 598-63-0) - lead hydrocarbonate (CAS No. 1319-46-0) - lead sulfate (CAS No. 15739-80-7).
...	...
2-52. Safety precautions must be taken in the event that lead (other than lead alkyls and preparations of lead alkyls) is used (Appendix III, GefStoffV, 2.3).	Verify that cleanup rooms with showers are available to employees who work at jobs where dust is produced. (1)(2)(4)(5)(7) Verify, in the event that the MAK is exceeded, that a doctor or the competent authority decides whether or not to run tests on the affected employees immediately. Verify that the workers leave the area immediately in the event of a disruption of the proper operation of the facility that could lead to a considerable increase in exposure to lead. Verify that only those workers who are responsible for repairs enter areas where increased exposure to lead is likely. Verify, in the event that the BAT is exceeded, that new readings are taken within 3 months (mo). Verify that workers enter only those areas with lower risk of exposure to lead in the event that the BAT is exceeded when the new readings are taken.
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
AMMONIUM NITRATE **General** **2-53.** The storage, transfer, and intra-operational transport of ammonium nitrate and preparations that contain ammonium nitrate in Groups A, B, and C of Table 2-1, Chart 4 must meet certain requirements (Appendix IV, GefStoffV, 2.1).	(NOTE: The following requirements do not apply if there is no more than 10 percent ammonium nitrate by weight, if there is no more than 100 kg of ammonium nitrate and/or the preparations that contain it belonging to Group A of Chart 4, or if there is not more than 1 ton of preparations belonging to Groups B, C, or D of Chart 4.) Verify that the substances and preparations are stored in such a way as to be protected from the influence of the weather and in such a way that they do not become contaminated. (1)(2)(4)(5)(7) Verify that unauthorized persons do not have access to any buildings in which preparations in Groups B and C are stored. Verify that any buildings in which preparations in Groups B and C are stored have appropriate signage. Verify that the places where substances and preparations of Group A are stored are secure against access by unauthorized persons. Verify that there is no smoking in areas where substances and preparations of Groups A, B, or C are stored and that open flames are not found in those areas. Verify that the areas where substances and preparations of Groups A, B, or C are stored are marked with signs indicating that smoking and open flames are prohibited. Verify that previous written approval is sought before work involving fire or heat is carried out in areas where preparations and substances of Groups A, B, and C are stored. Verify, when substances and preparations of Groups A and B are concerned, that such work is carried out only by experts or under the constant supervision of an expert. Verify that hardened masses of substances and preparations of Groups A, B, or C are broken up using appropriate mechanical means only, and that no explosives or munitions are used are used to break them up. Verify that the substances and preparations of Groups A, B, and C are stored separate from combustible materials and separate from such materials as can enter into dangerous chemical reactions with ammonium nitrate.
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-54. Substances and preparations that belong to Group A of Table 2-1, Chart 4 are subject to certain additional provisions (Appendix IV, GefStoffV, 2.4.2).	Verify that the substances and materials are stored and transported in packaging only. (1)(2)(4)(5)(7) Verify that no flammable materials are stored in the storage room or within 10 meters (m) of the storage area. Verify that materials that have leaked or spilled are either used immediately or disposed of harmlessly.
...	...
2-55. Preparations in Group B of Table 2-1, Chart 4 must be stored under conditions that meet certain requirements (Appendix IV, GefStoffV, 2.4.3.1).	Verify that no fireplaces or other sources of ignition are in the storage space. (1)(2)(4)(5)(7) (NOTE: Openings for cleaning chimneys may be located in storage spaces if it is certain that no explosion is possible.) Verify that no more than three tons are stored within 50 m of buildings that are used continuously for human occupancy or within 50 m of public thoroughfares.
...	...
2-56. Preparations in Group D of Table 2-1, Chart 4 must be stored under conditions that meet certain requirements (Appendix IV, GefStoffV, 2.4.4).	Verify that preparations in Group D of Table 2-1, Chart 4 are stored in such a way that they are not subject to contamination or dessication. (1)(2)(4)(5)(7) Verify that residual amounts of preparations are removed by rinsing with water before work that involves either fire or heat is conducted on containers or equipment. Verify that pumps are designed and operated in such a way that no dangerous reactions can occur.
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Large Quantities	
2-57. Certain requirements must be met if more than one ton of substances or preparations in Group A of Table 2-1, Chart 4 are to be stored (Appendix IV, GefStoffV, 2.4.2.2).	Verify that load-bearing walls, ceilings, and supports in enclosed buildings are at least fire-resistant, and that they are fire-proof in the event that buildings of more than one story are used. (1)(2)(4)(5)(7) Verify that walls that separate storage areas from rooms used for other purposes are fire-proof. Verify that the roofing material is sufficiently resistant to airborne sparks and radiant heat. Verify that the floors are built of nonflammable material. (NOTE: A layer of mastic asphalt is permissible, but building materials other than those mentioned may be used only after a certificate of the Bundesanstalt fuer Materialforschung und -pruefung has been obtained.) Verify that the floors contain no drainage openings, no conduits, no pits, and no shafts. Verify that the storage area has no fireplaces or other sources of ignition, including openings for cleaning chimneys. Verify that facilities, equipment, and operating material that give off heat are arranged and secured in such a fashion that no heat transmission can occur that might lead to decomposition. Verify that a water supply sufficient to fight a fire is available and that appropriate fire-fighting equipment is on hand. Verify that the gases the arise from decomposition can be quickly drawn out into the open air. Verify that the building is protected against lightning.
...	...
2-58. A storage plan must be drawn up that meets certain requirements (Appendix IV, GefStoffV, 2.4.2.2(2)).	Verify that a storage plan exists that contains information on the way the material is stored and on the kind and amount of material that is stored. (1)(2)(4)(5)(7) Verify that a copy of the storage plan is kept outside the storage area in an easily accessible location. Verify that the storage plan is constantly updated.
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-59. No compreased gas, liquefied gas, or gas that is soluble under pressure may be stored in the same storage space (Appendix IV, GefStoffV, 2.4.2.2(3)).	Verify that no compreased gas, liquefied gas, or gas that is soluble under pressure is stored in the same storage space. (1)(2)(4)(5)(7) (NOTE: Fire extinguishers are not included in this prohibition.)
...	...
2-60. No machinery or vehicles that use gasoline or liquid gas may be operated or stored in the same storage space (Appendix IV, GefStoffV, 2.4.2.2 (4)).	Verify that no machinery or vehicles that use gasoline or liquid gas are operated or stored in the same storage space. (1)(2)(4)(5)(7)
...	...
2-61. Quantities of less than 3 tons may not be stored within 50 m of buildings that are used continuously for human occupancy or within 50 m of public thoroughfares (Appendix IV, GefStoffV, 2.4.2.2(9)).	Verify that no more than 3 tons are stored within 50 m of public thoroughfares or buildings that are continuously occupied by human beings. (1)(2)(4)(5)(7)
...	...
HIGH-PRESSURE GAS LINES	
2-62. The competent authority must be informed of the existence of high-pressure gas pipelines (Verordnung ueber Gashochdruckleitungen, Section 15(2)).	Verify that the competent authority has been informed of the existence of the high-pressure gas pipelines on the installation, if any. (1)(2)(4)(5)
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-63. Certain reporting requirements must be met if there are plans to build a high-pressure gas pipeline, or if substantial changes or expansion are planned (Verordnung ueber Gashochdruckleitungen, Sections 5(1) and 7(1)).	(NOTE: Any change that could compromise the safety of the pipeline is considered substantial.) Verify that the competent authority is informed at least eight weeks before the start of construction and that all the documents necessary to judge the safety of the project are included. (1)(2)(4)(5) Verify that the report includes a formal declaration on the part of an expert that the design of the pipeline and the plans for its operation meet the requirements of questions 2-70 through 2-83 below.
...	...
2-64. High-pressure gas pipelines require certification under certain circumstances (Verordnung ueber Gashochdruckleitungen, Section 6(2)).	Verify that an expert has issued a certificate to the effect that she/he has examined the pipeline and determined that it is leakproof and sturdy and that the necessary safety equipment is present. (1)(2)(4)(5) Verify that certification occurred prior to putting the pipeline into operation or prior to its resuming operation after substantial modification or expansion.
...	...
2-65. A copy of the expert's certificate must be filed with the competent authority (Verordnung ueber Gashochdruckleitungen, Section 6(3)).	Verify that a copy of the certificate has been deposited with the prior to being put into operation or resuming operation after substantial change or expansion until competent authority. (1)(2)(4)(5)
...	...
2-66. The opinion of an expert must be sought if work is to be done on a high-pressure gas pipeline unless that work cannot possibly effect the safety of the line or if an imminent danger makes the work necessary (Verordnung ueber Gashochdruckleitungen, Section 7(2)).	Verify that expert opinion is sought when necessary before work is to be done on a high-pressure gas pipeline. (1)(2)(4)(5)
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-67. The operator of a high-pressure gas pipeline must keep it in good order, must monitor it, immediately undertake such maintenance and repair work as is necessary, and must see that necessary safety precautions are taken (Verordnung ueber Gashochdruckleitungen, Section 8).	Verify that the operator's obligations are being fulfilled on the installation. (1)(2)(4)(5)
...	...
2-68. The pressure in the line must be reduced or operation of the line must cease under certain circumstances (Verordnung ueber Gashochdruckleitungen, Section 8).	Verify that pressure in the line is reduced or its operation is halted when: (1)(2)(4)(5) - the line is not in good repair and workers are endangered as a result - work is undertaken on an operational pipeline - the safety of the line is threatened in any other way.
...	...
2-69. The competent authority must be informed immediately in certain circumstances (Verordnung ueber Gashochdruckleitungen, Section 11).	Verify that the competent is informed immediately in the event: (1)(2)(4)(5) - of an accident connected with the operation of the line in the course of which anyone is killed or anyone's health is seriously harmed - of an accident in which the line leaks to the point where the safety of the surrounding area is endangered or in which significant property damage has occurred - any circumstance where persons or property are concretely endangered.
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-70. High-pressure gas pipelines must be so constructed that they can meet the demands placed on them and still remain safe and leakproof (Verordnung ueber Gashochdruckleitungen, Appendix I, 1).	Verify that the pipeline is so constructed that it can meet the demands placed on it and remain safe and leakproof. (1)(2)(4)(5)
...	...
2-71. High-pressure gas pipelines must be laid within a safety strip or zone (Verordnung ueber Gashochdruckleitungen, Appendix I, 2).	Verify that the pipeline is laid within a safety strip or zone. (1)(2)(4)(5)
...	...
2-72. The course of the pipeline and the position of the regulating equipment necessary for its operation must be marked (Verordnung ueber Gashochdruckleitungen, Appendix I, 2).	Verify that the course of the pipeline and the position of the regulating equipment necessary for its operation are marked by means of signs, arrows, or other markers. (1)(2)(4)(5)
...	...
2-73. High-pressure gas pipelines must be protected from external influences (Verordnung ueber Gashochdruckleitungen, Appendix I, 3).	Verify that the line is protected from external influences. (1)(2)(4)(5)
...	...
2-74. High-pressure gas pipelines that are belowground must be buried at a depth that is appropriate given local conditions, and they must remain covered (Verordnung ueber Gashochdruckleitungen, Appendix I, 3).	Verify that high-pressure gas pipelines that are belowground are buried at a depth that is appropriate given local conditions, and that they remain covered. (1)(2)(4)(5) (NOTE: The lines must be buried at such a depth that the activities that are permitted within the safety strip or zone cannot harm the line.)
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-75. If high-pressure gas pipelines are buried in trenches along with other kinds of pipelines, neither line may influence the safety of the other (Verordnung ueber Gashochdruckleitungen, Appendix I, 4).	Determine whether high-pressure gas pipelines are buried in trenches along with other kinds of pipelines. (1)(2)(4)(5) Verify that neither line has an adverse effect on the safety of the other. (NOTE: This provision holds as well for lines that cross one another.)
...	...
2-76. High-pressure gas pipelines are to be protected against exterior corrosion, and so far as is necessary, against interior corrosion as well (Verordnung ueber Gashochdruckleitungen, Appendix I, 5).	Verify that high-pressure gas pipelines are protected against exterior corrosion, and so far as is necessary, against interior corrosion as well. (1)(2)(4)(5)
...	...
2-77. Precautions against the dangerous properties of the gases are to be taken in areas such as manholes, compressor rooms, or rooms where regulating equipment is found (Verordnung ueber Gashochdruckleitungen, Appendix I, 3).	Verify that precautions against the dangerous properties of the gases are taken in areas where they can accumulate. (1)(2)(4)(5)
...	...
2-78. High-pressure gas pipelines must be fitted with safety equipment that prevents the occurrence of impermissibly high pressures during operation or pauses in transfer (Verordnung ueber Gashochdruckleitungen, Appendix I, 7).	Verify that high-pressure gas pipelines are fitted with safety equipment that prevents the occurrence of impermissibly high pressures during operation or pauses in transfer. (1)(2)(4)(5)
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-79. High-pressure gas pipelines are to be fitted with specific sorts of equipment (Verordnung ueber Gashochdruck-leitungen, Appendix I, 7).	Verify that high-pressure gas pipelines are equipped with equipment: (1)(2)(4)(5) - that measures and records operating pressures continuously - that detects losses of gas during the operation - that limits the amounts of gas that can escape in the event of an accident. (NOTE: The types and numbers of such equipment must be appropriate to the way the pipeline is operated and to local conditions.)
...	...
2-80. Operating sites for high-pressure gas lines must meet certain requirements (Verordnung ueber Gashochdruck-leitungen, Appendix I, 8).	Verify that the equipment that is important for the safety of the pipeline can be be operated from the operating site, that the operating site is manned constantly, and that disruptions are obvious to the personnel manning the site at all times. (1)(2)(4)(5)
...	...
2-81. Records must be kept on significant aspects of operations, on inspections, and on maintenance of the high-pressure gas pipeline (Verordnung ueber Gashochdruckleitungen, Appendix I, 9).	Verify that records are kept on significant aspects of operations, on inspections, and on maintenance of the high-pressure gas pipeline. (1)(2)(4)(5)
...	...
2-82. The trench in which the high-pressure gas pipeline is buried (if any) must be inspected at regular intervals (Verordnung ueber Gashochdruckleitungen, Appendix I, 10).	Verify that the trench in which the high-pressure gas pipeline is buried (if any) is inspected at regular intervals on foot or from the air. (1)(2)(4)(5)
...	...
2-83. An emergency crew that meets certain requirements must be able to respond in the event of an accident (Verordnung ueber Gashochdruckleitungen, Appendix I, 11).	Verify that an emergency crew exists that is composed of properly trained individuals, equipped with vehicles, equipment, and tools adequate to allow it to respond effectively to limit and/or remove the consequences of accidents and, if possible, to undertake necessary corrective measures immediately. (1)(2)(4)(5)
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
FLAMMABLES / COMBUSTIBLES **Storage Facilities for Combustible Liquids - Notification and Permits**	(NOTE: This section does not apply if combustible liquids are part of the working process in the workplace, if they are kept at hand in the quantities necessary for the work carried out in the workplace, if they are stored (for short periods only) as finished products or intermediate products of the workplace, or if they are stored in quantities necessary for laboratory use.)
2-84. The supervisory authority must be informed of the existence of facilities for the storage of combustible liquids of Dangerous-Materials Classes AI, AII, or B under certain circumstances (VbF, Section 8(1)(1)).	Verify that the supervisory authority has been informed of the existence of facilities for the storage of combustible liquids of Dangerous-Materials Classes AI, AII, or B in the manners and amounts listed in Table 2-3. (1)(2)(4)(5)(7) (NOTE: Facilities that store combustible liquids of Dangerous-Materials Class AIII exclusively are not subject to this notification requirement.)
...	...
2-85. The supervisory authority must be informed of the existence of filling stations in enclosed areas in which more than 200 L but less than a total of 1000 L/h per room of combustible liquids of Dangerous-Materials Class AI, AII, or B can be drawn off (VbF, Section 8(1)(2)).	Verify that the supervisory authority has been informed of the existence of filling stations in enclosed areas in which more than 200 L but less than a total of 1000 L/h per room of combustible liquids of Dangerous-Materials Class AI, AII, or B can be drawn off. (1)(2)(4)(5)(7)
...	...
2-86. The supervisory authority must be informed of the existence of filling stations for combustible liquids of Dangerous-Materials Class AIII under certain circumstances (VbF, Section 8(1)(3)).	Verify that the supervisory authority has been informed of the existence of filling stations for combustible liquids of Dangerous-Materials Class AIII that are in the same room with stations in enclosed areas in which more than 200 L but less than a total of 1000 L/h per room of combustible liquids of Dangerous-Materials Class AI, AII, or B can be drawn off. (1)(2)(4)(5)(7)
...	...
2-87. Anyone who puts a facility subject to notification requirements into operation must inform the supervisory authority prior to putting it into operation (VbF, Section 8(4)).	Verify that the supervisory authority is notified of the facility's existence prior to putting it in operation. (1)(2)(4)(5)(7) Verify that the notification includes all such documentation as is necessary to evaluate it.

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-88. If a facility that requires a permit (see below) is taken out of operation for longer than 6 mo, the supervisory authority must be notified when the 6 mo have ended (VbF, Section 22).	Verify that the installation notifies the supervisory authority after 6 mo have passed if a facility that requires a permit is taken out of operation for longer than 6 mo. (1)(2)(4)(5)(7)
...	...
2-89. If a facility that requires a permit (see below) has been out of operation for more than 6 mo, the supervisory authority must be informed in advance if it is to be put back into operation (VbF, Section 22).	Verify that the supervisory has been informed in advance if a facility that requires a permit is being put back into operation after having been out of operation for more than 6 mo. (1)(2)(4)(5)(7)
...	...
2-90. Installations that construct or operate facilities for the storage, filling, or transfer of combustible liquids on land may use certain types of equipment in those facilities only if that equipment has official design approval from the competent authority (VbF, Section 12).	Verify that portable containers for combustible liquids of Dangerous-Materials Classes AI, AII, and B with a capacity of more than 1 L are used only if they have official design approval from the competent authority. (1)(2)(4)(5)(7) (NOTE: This applies only to portable containers the load-bearing walls of which are not all metal.)
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Inspection	(NOTE: This section does not apply if combustible liquids are part of the working process in the workplace, if they are kept at hand in the quantities necessary for the work carried out in the workplace, if they are stored (for short periods only) as finished products or intermediate products of the workplace, or if they are stored in quantities necessary for laboratory use.)
2-91. Certain facilities must be inspected by specialists in certain circumstances (VbF, Sections 13(1), 13(2)).	(NOTE: It is the responsibility of the installation to arrange for the necessary inspections.) Verify that the following facilities are inspected by specialists before they are put into operation, and every five yr thereafter, or before they are put back into operation after their design or operation has been substantially modified, or if they have been out of operation for more than 1 yr: (1)(2)(4)(5)(7) - storage facilities that require a permit (see above) (NOTE: Storage areas for portable containers are exempted.) - storage areas for portable containers, if the areas require a permit (NOTE: VbF appears to contradict itself at this point.) - outdoor storage areas for aboveground containers, if the areas require a permit, and storage areas for underground tanks.
...	...
2-92. The certificate of inspection or a copy of it must be kept near the facility (VbF, Section 18(3)).	Verify that the certificate of inspection or a copy of it is kept near the facility. (1)(2)(4)(5)(7)
...	...
Incident Reporting	(NOTE: This section does not apply if combustible liquids are part of the working process in the workplace, if they are kept at hand in the quantities necessary for the work carried out in the workplace, if they are stored (for short periods only) as finished products or intermediate products of the workplace, or if they are stored in quantities necessary for laboratory use.)
2-93. The supervisory authority must be notified immediately of the certain events (VbF, Section 23(1)).	Verify that the supervisory authority is notified immediately of the following events: (1)(2)(4)(5)(7) - an explosion - a fire - an unintentional release of combustible liquid from a container or pipeline, if the release occurs at a rate greater than 10 L/h - an injury accident involving the dangers that are typically associated with the facility.
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
DANGEROUS-MATERIALS CLASSES AI, AII, OR B **General Requirements**	
2-94. Certain facilities must have lightening protection (VbF, Appendix II, 100.9).	Verify that the following facilities have lightening protection: (1)(2)(4)(5)(7) - buildings in which are found aboveground facilities for the storage, filling, or transfer of combustible liquids - outdoor aboveground tanks - underground tanks that are not surrounded on all sides by earth, concrete, masonry, or several of those materials.
...	...
2-95. Facilities for the storage, filling, or transfer of combustible liquids must have access routes for firefighters that are so laid out and labelled that locations where fires are likely to occur can be reached quickly and unhindered (VbF, Appendix II, 100.5(2)).	Verify that facilities for the storage, filling, or transfer of combustible liquids have access routes for firefighters that are so laid out and labelled that locations where fires are likely to occur can be reached quickly and unhindered. (1)(2)(4)(5)(7)
...	...
2-96. Combustible liquids may not be stored in certain locations (VbF, Section 11).	Verify that no combustible liquids are stored in the following locations: (1)(2)(4)(5)(7) - in passageways [Durchgaenge und Durchfahrten] - on stairways or in stairwells - in generally accessible corridors - on the roofs of houses, hospitals, office buildings. and similar buildings, or in the attics of such buildings - in workrooms [Arbeitsraeume] - in guestrooms and bars.
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Storage Areas Not Subject to Notification or Permit Requirements	
2-97. Storage rooms above and belowground level must be separated from other rooms by fire-proof walls (VbF, Appendix II, 110.1(2)).	Verify that storage rooms above and belowground level are separated from other rooms by fire-proof walls. (1)(2)(4)(5)(7)
...	...
2-98. Storage rooms above and belowground level and storage areas for aboveground containers may not be accessible to general traffic (VbF, Appendix II, 110.1(4)).	Verify that storage rooms above and belowground level and storage areas for aboveground containers are not accessible to general traffic. (1)(2)(4)(5)(7)
...	...
2-99. Unauthorized persons may not enter indoor or outdoor storage areas, and an easily legible, readily visible sign must be present to indicate that fact (VbF, Appendix II, 110.1(5)).	Verify that unauthorized persons do not have access to indoor or outdoor storage areas. (1)(2)(4)(5)(7) Verify that an easily legible, readily visible sign is posted to indicate that access is forbidden to unauthorized persons.
...	...
Storage Areas Subject to Notification or Permit Requirements	
2-100. Combustible liquids must be stored in containers from which they cannot escape, or they must be stored in such a way that escaping combustible liquids can be contained, identified, and disposed of (VbF, Appendix II, 110.2(2)).	Verify that combustible liquids are stored in containers from which they cannot escape, or are stored in such a way that escaping combustible liquids can be contained, identified, and disposed of. (1)(2)(4)(5)(7) (NOTE: This requirement does not apply to combustible liquids stored aboveground in very small quantities.)
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-101. Storage areas both above and belowground level, and outdoor storage areas for aboveground containers, may not be accessible to general traffic (VbF, Appendix II, 110.2(5)).	Verify that storage areas both above and belowground level, and outdoor storage areas for aboveground containers, are not accessible to general traffic. (1)(2)(4)(5)(7)
...	...
2-102. Unauthorized persons may not enter indoor or outdoor storage areas, and an easily legible, readily visible sign must be present to indicate that fact (VbF, Appendix II, 110.1(5)).	Verify that unauthorized persons do not have access to indoor or outdoor storage areas. (1)(2)(4)(5)(7) Verify that an easily legible, readily visible sign is posted to indicate that access is forbidden to unauthorized persons.
...	...
Additional Requirements on Storage Rooms Above and Belowground Level Subject to Notification or to Permit Requirements	
2-103. The quantities of combustible liquids stored in storage rooms are to be consistent with the storage area's fire load (VbF, Appendix II, 110.3(1)).	Verify that the quantities of combustible liquids stored in storage rooms are consistent with the storage area's fire load. (1)(2)(4)(5)(7) (NOTE: "Fire load" is not defined.)
...	...
2-104. The walls, ceilings, and doors of storage rooms must at least be fire-resistant and must be built of noncombustible materials (VbF, Appendix II, 110.3(2)).	Verify that the walls, ceilings, and doors of storage rooms are at least fire-resistant and are built of noncombustible materials. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-105. Storage rooms must be separated from other rooms by fireproof walls (VbF, Appendix II, 110.3(3)).	Verify that storage rooms are separated from other rooms by fireproof walls. (1)(2)(4)(5)(7)
...	...
2-106. Storage rooms may not be located next to rooms that are or may be occupied by people for more than a brief period of time (VbF, Appendix II, 110.3(4),(5)).	Verify that storage rooms are not located next to rooms that are or may be occupied by people for more than a brief period of time. (1)(2)(4)(5)(7) (NOTE: Rooms that are used by storage area personnel are not included in the scope of this requirement.)
...	...
2-107. Storage rooms must be adequately illuminated and ventilated (VbF, Appendix II, 110.3(6)).	Verify that storage rooms are adequately illuminated and ventilated. (1)(2)(4)(5)(7)
...	...
Additional Requirements on Outdoor Storage in Aboveground Containers that is Subject to a Notification Requirement or to Permit Requirements	
2-108. Buildings and outdoor aboveground tanks must be separated by enough distance to prevent one from catching fire from the other (VbF, Appendix II, 110.4(1)).	Verify that buildings and outdoor aboveground tanks are separated by enough distance to prevent one catching fire from the other. (1)(2)(4)(5)(7)
...	...
2-109. There must be sufficient distance between tanks to allow for effective firefighting (VbF, Appendix II, 110.4(2)).	Verify that there is sufficient distance between tanks to allow for effective firefighting. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-110. Storage areas must be surrounded by a safety strip that is consistent with the design of the containers and with the amount of combustible material stored in the area (VbF, Appendix II, 110.4(3)).	Verify that storage areas are surrounded by a safety strip that is consistent with the design of the containers and with the amount of combustible material stored in the area. (1)(2)(4)(5)(7)
...	...
Filling Stations in Rooms	
2-111. Combustible liquids must be stored in containers from which they cannot escape, or they must be stored in such a way that escaping combustible liquids can be contained, identified, and disposed of (VbF, Appendix II, 111.2(2)).	Verify that combustible liquids are stored in containers from which they cannot escape, or are stored in such a way that escaping combustible liquids can be contained, identified, and disposed of. (1)(2)(4)(5)(7) (NOTE: This requirement does not apply to combustible liquids stored aboveground in very small quantities.)
...	...
2-112. Storage areas both above and belowground level, and outdoor storage areas for aboveground containers, may not be accessible to general traffic (VbF, Appendix II, 110.2(5)).	Verify that storage areas both above and belowground level, and outdoor storage areas for aboveground containers, are not accessible to general traffic. (1)(2)(4)(5)(7)
...	...
2-113. Combustible liquids of Dangerous-Materials Class AIII may be stored within the effective horizontal range of a fill nozzle for combustible liquids of Dangerous-Materials Classes AI, AII, or B under certain conditions only (VbF, Appendix II, 112.2(2)).	Verify that combustible liquids of Dangerous-Materials Class AIII are stored within the effective horizontal range of a fill nozzle for combustible liquids of Dangerous-Materials Classes AI, AII, or B under the following conditions only: (1)(2)(4)(5)(7) - in underground tanks that are surrounded on all sides by an earthen covering, or - in underground tanks with a capacity of no more than 5000 L, if the level of liquid stored does not reach aboveground level, or - in aboveground tanks with a capacity of no more than 1000 L.
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-114. Fuel may not be stored together with EL fuel oil in subdivided tanks (VbF, Appendix II, No. 2.2(3)). ...	Verify that fuel is not stored together with EL fuel oil in subdivided tanks. (1)(2)(4)(5)(7) ...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
General Provisions for Permanent Tanks (Metal or Nonmetal)	
2-115. The walls of permanent tanks, whether of metal or not, must meet certain requirements (VbF, Appendix II, 120.2).	Verify that the walls of permanent tanks, whether of metal or not, meet the following requirements: (1)(2)(4)(5)(7) - tank walls are able to meet the mechanical, chemical, and thermal demands that can be expected to be placed on them - tank walls are impervious to the combustible liquids they may contain and to vapors generated by those liquids - tank walls are age-resistant and fireproof - tank walls are so designed that they do not give rise to electrostatic charges.
...	...
2-116. Permanent tanks, whether of metal or not, must meet certain requirements (VbF, Appendix II, 120.3).	Verify that permanent tanks, whether of metal or not, meet the following requirements: (1)(2)(4)(5)(7) - tanks must be structurally sound and so designed that they are able to meet the demands placed on them and remain free of leaks - tanks must be resistant to the static pressure of the liquid they contain, to excess or reduced pressures that might arise in the course of operation, and to external strains and influences - if combustible liquids of various Dangerous-Materials Classes or combustible liquids that could have dangerous by products if mixed are stored together in a subdivided tank, the compartments must be separate such that the liquids and their vapors cannot interact.
...	...
2-117. Permanent tanks must be set up on foundations and installed in such a way that shifts and dips that could compromise the safety of the tanks or their equipment cannot occur (VbF, Appendix II, 120.4).	Verify that permanent tanks are set up on foundations and installed in such a way that shifts and dips that could compromise the safety of the tanks or their equipment cannot occur. (1)(2)(4)(5)(7)
...	...
2-118. Tanks must have ventilation and pressure release equipment that prevents dangerous overpressures or underpressures from arising (VbF, Appendix II, 120.5(1)).	Verify that tanks have ventilation and pressure release equipment that prevents dangerous overpressures or underpressures from arising. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-119. Tanks must have such safety equipment as is necessary harmlessly to draw off air/vapor mixtures that arise in the course of filling (VbF, Appendix II, 120.5(2)).	Verify that tanks have such safety equipment as is necessary harmlessly to draw off air/vapor mixtures that arise in the course of filling. (1)(2)(4)(5)(7)
...	...
2-120. Tank openings through which flames might be able to enter the tank must have valves that prevent flashback (VbF, Appendix II, 120.5(3)).	Verify that tank openings through which flames might be able to enter the tank have valves that prevent flashback. (1)(2)(4)(5)(7) (NOTE: This requirement does not apply to the openings of tanks in which explosive conditions can be expected not to arise given the circumstances, nor to those tanks that could suffer the explosion of air/vapor mixtures inside them without themselves exploding. Further, it does not apply to the following: - tank openings that are securely shut in the course of operation and are so secure that no unintentional loosening of seals is possible - lockable openings for manual gauging - gauge pipes for tanks with floating covers - openings of floating covers the caps of which are opened only when the cover rests on its supports.)
...	...
2-121. All tanks must be equipped with a device that indicates fluid level (VbF, Appendix II, 120.5(4)).	Verify that all tanks are equipped with a device that indicates fluid level. (1)(2)(4)(5)(7) (NOTE: Level indicators are not required on aboveground tanks made of synthetic material that is sufficiently transparent to allow the level of the liquid to be visible.)
...	...
2-122. All tanks must be equipped with overflow prevention devices that either sound an alarm or interrupt the process of filling if an overflow is going to occur (VbF, Appendix II, 120.5 (5)).	Verify that all tanks are equipped with overflow prevention devices that either sound an alarm or interrupt the process of filling if an overflow is going to occur. (1)(2)(4)(5)(7)
...	...
2-123. Any connection to a pipeline below the permissible liquid level of a tank must have a shut-off device (VbF, Appendix II, 120.5(6)).	Verify that any connection to a pipeline below the permissible liquid level of a tank has a shut-off device. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-124. All tanks must have at least one opening through which the tank may be entered or inspected visually (VbF, Appendix II, 120.5(7)).	Verify that all tanks have at least one opening through which the tank may be entered or inspected visually. (1)(2)(4)(5)(7)
...	...
2-125. Pipelines that conduct liquid and are part of the equipment of tanks are subject to certain requirements (VbF, Appendix II, 120.5(8)).	Verify that pipelines that conduct liquid and are part of the equipment of tanks meet the following requirements: (1)(2)(4)(5)(7) - such pipelines are able to meet the mechanical, chemical, and thermal demands that can be expected to be placed on them - such pipelines are impervious to the combustible liquids they may contain and to vapors generated by those liquids - such pipelines are age-resistant and fireproof - such pipelines are so designed that they do not give rise to electrostatic charges - such pipelines must be structurally sound and so designed that they are able to meet the demands placed on them and remain free of leaks - such pipelines must be resistant to the static pressure of the liquid they contain, to excess or reduced pressures that might arise in the course of operation, and to external strains and influences.
...	...
2-126. All tanks must have manufacturer's placards that give all the information necessary to distinguish them (VbF, Appendix II, 120.6).	Verify that all tanks have manufacturer's placards that give all the information necessary to distinguish them. (1)(2)(4)(5)(7)
...	...
Additional Provisions for Permanent Tanks (Metal or Nonmetal) with Interior Overpressure	
2-127. Permanent tanks with interior overpressure must be equipped with a device that allows the interior pressure to be monitored (VbF, Appendix II, 120.7(1)).	Verify that permanent tanks with interior overpressure are equipped with a device that allows the interior pressure to be monitored. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-128. Permanent tanks with interior overpressure must have a safety device that prevents permissible pressures from being exceeded, if permissible pressures can indeed be exceeded (VbF, Appendix II, 120.7(2)).	Verify that permanent tanks with interior overpressure have a safety device that prevents permissible pressures from being exceeded, if permissible pressures can indeed be exceeded. (1)(2)(4)(5)(7)
...	...
2-129. Tanks with interior overpressure that may be opened in the course of operation must have release equipment that can be operated by hand (VbF, Appendix II, 120.7(3)).	Verify that tanks with interior overpressure that may be opened in the course of operation have release equipment that can be operated by hand. (1)(2)(4)(5)(7)
...	...
2-130. Tanks in which it is possible that an interior overpressure might arise but that are not resistant to interior overpressure must be equipped with a device that prevents interior overpressures from arising (VbF, Appendix II, 120.7(4)).	Verify that tanks in which it is possible that an interior overpressure might arise but that are not resistant to interior overpressure are equipped with a device that prevents interior overpressures from arising. (1)(2)(4)(5)(7)
...	...
Metal Permanent Tanks	
2-131. Tanks that are made of materials that are not corrosion-resistant must be protected against external corrosion (VbF, Appendix II, 121.1(1)).	Verify that tanks that are made of materials that are not corrosion-resistant are protected against external corrosion. (1)(2)(4)(5)(7)
...	...
2-132. The interior walls of tanks must have corrosion protection under certain circumstances (VbF, Appendix II, 121.1(2)).	Verify that the interior walls of tanks have corrosion protection, if it is necessary given the nature of the material being stored. (1)(2)(4)(5)(7) (NOTE: Double-walled tanks are not subject to this requirement, nor are those that are located in containment areas.)

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Portable Containers	
2-133. The walls of portable containers, whether of metal or not, must meet certain requirements (VbF, Appendix II, 143.2(1)).	Verify that the walls of portable containers, whether of metal or not, meet the following requirements: (1)(2)(4)(5)(7) - container walls are able to meet the mechanical, chemical, and thermal demands that can be expected to be placed on them - container walls are impervious to the combustible liquids they may contain and to vapors generated by those liquids - container walls are age-resistant and fireproof - container walls are so designed that they do not give rise to electrostatic charges.
...	...
2-134. Portable containers must be labelled with information on the dangers of the combustible liquids they contain (VbF, Appendix II, 143.2(2)).	Verify that portable containers are labelled with information on the dangers of the combustible liquids they contain. (1)(2)(4)(5)(7)
...	...
Operational Requirements	
2-135. The installation is required to meet certain educational requirements relevant to combustible liquids (VbF, Appendix II, 180.1(1)).	Verify that the installation presents the content of the applicable parts of the *Verordnung ueber brennbare Fluessigkeiten* in a comprehensible form to its employees. (1)(2)(4)(5)(7) Verify that information on the content of the applicable parts of the *Verordnung ueber brennbare Fluessigkeiten* is displayed in an appropriate place in the work areas. Verify that at least once a year the installation informs people who work with combustible liquids of the dangers that may arise in the course of storage, filling, or transferring those liquids. Verify that at least once a year the installation informs people who work with combustible liquids of measures for avoiding the dangers that may arise in the course of storage, filling, or transferring those liquids.
...	...
2-136. Only certain persons may be employed in the maintenance, repair, and cleaning of the installations facilities (VbF, Appendix II, 180.1(4)).	Verify that the installation employs only those professionals in the construction, maintenance, repair, and cleaning of its facilities or parts of its facilities who have the equipment that is necessary to carry out the work safely. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Operational Requirements for Containers	
2-137. Containers must not be over-filled (VbF, Appendix II, 180.2(1)).	Verify that filling of containers is carried out in such a way that the containers are not over-filled. (1)(2)(4)(5)(7)
...	...
2-138. Filling of containers must be carried out in such a way that electrostatic charges are not produced (VbF, Appendix II, 180.2(2)).	Verify that filling of containers is carried out in such a way that electrostatic charges are not produced. (1)(2)(4)(5)(7)
...	...
2-139. Certain maximum overpressure limits must be observed when filling tanks that do not operate with interior pressure (VbF, Appendix II, 180.2(3)).	Verify that the overpressure does not exceed 0.1 bar when filling tanks that do not operate with interior pressure. (1)(2)(4)(5)(7) (NOTE: When tanks without interior pressure that have been given an overpressure rating of at least 2 bar are being filled, overpressures up to 0.5 bar are permissible.)
...	...
2-140. A gas displacement process must be used if air/vapor mixtures that occur in the course of filling cannot be conducted away safely (VbF, Appendix II, 180.2(5)).	Verify that a gas displacement process is used if air/vapor mixtures that occur in the course of filling cannot be conducted away safely. (1)(2)(4)(5)(7)
...	...
2-141. The permissible fill-level for containers must be calculated so that the containers do not overflow and overpressures that might compromise the liquid-tightness of the containers do not arise (VbF, Appendix II, 180.2(5)).	Verify that the permissible fill-level for containers is calculated so that the containers do not overflow and overpressures that might compromise the liquid-tightness of the containers do not arise. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-142. Only noncombustible gases or those that do not support combustion may be used as pressurants in the mixing or transfer of combustible liquids (VbF, Appendix II, 180.2(6)).	Verify that only noncombustible gases or those that do not support combustion are used as pressurants in the mixing or transfer of combustible liquids. (1)(2)(4)(5)(7) (NOTE: This restriction does not apply to the tanks of vacuum-pressure tank trucks.)
...	...
2-143. Containers that are taken out of service are to be secured in such way that they do not pose a danger to workers or to third parties (VbF, Appendix II, 180.2(7)).	Verify that containers that are taken out of service are secured in such way that they do not pose a danger to workers or to third parties. (1)(2)(4)(5)(7)
...	...
DANGEROUS-MATERIALS CLASS AIII	
2-144. Facilities for the storage, filling, and transfer of combustible liquids must have adequate fire protection equipment (VbF, Appendix II, 200.3(1)).	Verify that facilities for the storage, filling, and transfer of combustible liquids have adequate fire protection equipment. (1)(2)(4)(5)(7)
...	...
2-145. Facilities for the storage, filling, or transfer of combustible liquids must have access routes for firefighters that are so laid out and labelled that locations where fires are likely to occur can be reached quickly and unhindered (VbF, Appendix II, 200.3(2)).	Verify that facilities for the storage, filling, or transfer of combustible liquids have access routes for firefighters that are so laid out and labelled that locations where fires are likely to occur can be reached quickly and unhindered. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-146. Combustible liquids must be stored in containers from which they cannot escape, or they must be stored in such a way that escaping combustible liquids can be contained, identified, and disposed of (VbF, Appendix II, 210.1(2)).	Verify that combustible liquids are stored in containers from which they cannot escape, or are stored in such a way that escaping combustible liquids can be contained, identified, and disposed of. (1)(2)(4)(5)(7) (NOTE: This requirement does not apply to combustible liquids stored aboveground in very small quantities.)
...	...
2-147. The capacity of containment areas is to be sufficiently great that what is stored in the area cannot escape the containment area (VbF, Appendix II, 210.1(3)).	Verify that the capacity of containment areas is sufficiently great that what is stored in the area cannot escape the containment area. (1)(2)(4)(5)(7)
...	...
2-148. Containment areas must be built of nonflammable materials and must be sufficiently impermeable and leakproof (VbF, Appendix II, 210.1(4)).	Verify that containment areas are built of nonflammable materials and are sufficiently impermeable and leakproof. (1)(2)(4)(5)(7)
...	...
2-149. Unauthorized persons may not enter storage areas (VbF, Appendix II, 210.1(5)).	Verify that unauthorized persons do not have access to storage areas. (1)(2)(4)(5)(7) Verify that an easily legible, readily visible sign is posted to indicate that access is forbidden to unauthorized persons.
...	...
2-150. Combustible liquids of Dangerous-Materials Class AIII may be stored within the effective horizontal range of a fill nozzle for combustible liquids of Dangerous-Materials Classes AI, AII, or B under certain conditions only (VbF, Appendix II, 112.2(2)).	Verify that combustible liquids of Dangerous-Materials Class AIII are stored within the effective horizontal range of a fill nozzle for combustible liquids of Dangerous-Materials Classes AI, AII, or B under the following conditions only: (1)(2)(4)(5)(7) - in underground tanks that are surrounded on all sides by an earthen covering, or - in underground tanks with a capacity of no more than 5000 L, if the level of liquid stored does not reach aboveground level, or - in aboveground tanks with a capacity of no more than 1000 L.
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-151. The quantities of combustible liquids stored in storage rooms are to be consistent with the storage area's fire load (VbF, Appendix II, 210.2(1)).	Verify that the quantities of combustible liquids stored in storage rooms are consistent with the storage area's fire load. (1)(2)(4)(5)(7) (NOTE: "Fire load" is not defined.)
...	...
2-152. The walls, ceilings, and doors of storage rooms must at least be fire-resistant and must be built of noncombustible materials (VbF, Appendix II, 210.2(2)).	Verify that the walls, ceilings, and doors of storage rooms are at least fire-resistant and are built of noncombustible materials. (1)(2)(4)(5)(7)
...	...
2-153. Storage rooms must be separated from other rooms by fireproof walls (VbF, Appendix II, 210.2(3)).	Verify that storage rooms are separated from other rooms by fireproof walls. (1)(2)(4)(5)(7)
...	...
RHEINLAND-PFALZ HAZARDOUS SUBSTANCES	
2-154. Containers and pipelines for combustible gases and liquids must be reliable and fireproof and may not cause danger or unreasonable nuisance (LBauO, Section 36(1)).	Verify that containers and pipelines for combustible gases and liquids are reliable and fireproof and do not cause danger or unreasonable nuisance. (1)(2)(4)(5)(7)
...	...
2-155. Containers for combustible gases and liquids may be placed only in those rooms or areas in which no dangers can arise, given the location, size, design, and use of the rooms or areas (LBauO, Section 36(4)).	Verify that containers for combustible gases and liquids are placed only in those rooms or areas in which no dangers can arise given the location, size, design, and use of the rooms or areas. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-156. Combustible materials are to be stored such that neither danger nor unreasonable nuisance can arise (LBauO, Section 36(6)).	Verify that combustible materials are stored such that neither danger nor unreasonable nuisance can arise. (1)(2)(4)(5)(7)
...	...
2-157. Combustible liquids with a flashpoint under 21 ^{o}C may not be used in garages (Garagenverordnung, Section 23(3)).	Verify that combustible liquids with a flashpoint under 21 ^{o}C are not used in garages. (1)(2)(4)(5)(7)

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Table 2-1

Charts Related to Hazardous Substances Ordinance (GefStoffV)

Chart One: Classed List of Hazardous Solvents

Class I: Highly Toxic and Toxic Materials

Number from Chart VI	Name of Material
	Class I/a
78	Anilin
123	Benzene
284	2-Chlor-ethanol (Ethylene chlorhydrine)
425	1,2-Dibromethane (Ethylene dibromide)
936	Carbon disulfide
1126	Nitrobenzene
1164	Pentachlorethane
1245	2-Propen-1-ol (Allyl alcohol)
1337	1,1,2,2-Tetrabromethane (Acetylene tetrabromide)
1338	1,1,2,2-Tetrachlorethane
1341	Tetrachlormethane (Carbon tetracholoride)
	Class I/b
446	2,2'-Dichlor-diethyl ether
817	2-Furyl-methanal (Furfural)
938	Cresol
1185	Phenol
1224	Piperidine
	Class I/c
8	Acetonitril
187	1-Brompropane
855	2-Hexanon (Methylbutylketone)
981	Methanol (Methyl alcohol)

Class II: Relatively Less Toxic Materials

Number from Chart VI	Name of Material
	Class II/a
269	Chlorobenzene
308	1-Chlor-1-nitropropane
443	1,2-Dichlorobenzene (o-Dicholorobenzene)
450	1,2-Cichloroethane (Ethylene chloride)
648	1,4-Dioxan
815	Furfuryl alcohol
852	Hexane, a mix of isomers with more than 5% n-hexane
1044	4-Methyl-pent-3-en-2-on (Mesityl oxide)
1133	1-Nitropropane
1134	2-Nitrolpropane
1275	Pyridine
1402	1,1,2-Tricholoroethane
1408	Trichloromethane (Chloroform)
	Class II/b
208	2-Butoxy-ethanol (Butyl glycol)
428	Dibrommethane (Methylene bromide)
449	1,1-Dicholoroethane (Ethylide chloride)
451	1,1-Dichloroethene (1,1-Dichloroethylene)
452	1,2-Dichloroethene (1,2-Dichloroethylene)
476	Dichloropropane
559	N,N-Dimethyl acetamide
588	N,N-Dimethyl formamide
1128	Nitroethane
1129	Nitromethane
1339	Tetrachloroethene (Perchlorethylene)
1403	Tricholroethene (Trichloroethylene)

Table 2-1 (continued)

Number from Chart VI	Name of Material
	Class II/c
132	Benzyl alcohol
323	Chloropropane
375	Cyclohexanon
577	Dimethyl carbonate
735	Ethylbenzene
738	2-Ethylbutanol
988	2-Methoxyethanol (Methyl glycol)
1015	2-Methyl-cyclohexanon
1054	o-Methylstyrol (2-Vinyl-toluene)
1068	Monochloropentane (Amyl chloride)
1172	2,4-Pentandion
1335	Turpentine oil
1376	Toluene
1401	1,1,1-Tricholoroethane
1481	Xylene
	Class II/d
73	Amyl alcohol, excepting ter-Pentanol
201	Butanol, excepting tert-Butanol (Butyl alcohol)
209	2-Butoxy-ethyl-acetate (Butylglycol acetate)
211	1-(2-Butoxypropoxy)-2-propanol
374	Cyclohexanol
459	Dichloromethane (Methylene chloride)
710	Ethandiol
727	2-Ethoxy-ethyl acetate (Ethylglycol acetate)
830	2-Heptanon
854	1-Hexanol
896	2-Isopropoxy-ethanol (Isopropyl glycol)
989	2-Methoxy-ethyl acetate (Methylglycol acetate)
1004	2-Methylbutanol-2 (tert-Pentanol)
1014	2-Methylcyclohexanol
1045	2-Methylpropanol-2 (tert-Butyl alcohol)
1355	Tetrahydrothiophene-1,1-dioxide (Sulfolan)

Table 2-1 (continued)

Caustic Materials

		Level at which given symbol is part of label	
		C	Xi
415	1,2-Diaminoethane (Ethylenediamine)	>10	≥ 2
708	Acetic anhydride	>20	≥ 8
1251	Propionic anhydride	>25	≥10
	Irritants		
155	2,5-Bis-(hydroxymethyl)-tetrahydrofuran		≥10
210	3-Butoxy-2-propyl alcohol		≥25
499	1,1-Diethoxy-ethane (Acetal)		≥10
590	2,6-Dimethyl-heptane-4-on (Diisobutyl ketone)		≥10
430	Di-n-butyl ether		≥10
726	2-Ethoxy-ethanol (Ethyl glycol)		≥25
867	4-Hydroxy-4-methyl-pentane-2-on (diacetone alcohol)		≥10
894	Isopropenylbenzene (a-Methylstyrene)		≥25
902	Isopropylbenzene (Cumene)		≥25
967	p-Methadien-1,8(9) (Dipentene)		≥25
971	Mesitylene (1,3,5-Trimethylbenzene)		≥25
1027	5-Methyl-3-heptanon		≥10
1041	2-Methyl-2,4-pentandiol		≥10
1042	4-Methyl-pentane-2-ol (Methylamyl alcohol)		≥25
1052	N-Methyl-2-pyrrolidon		≥10
1256	Propylbenzene		≥25
1319	Styrene		≥25
1350	Tetrahydrofuran		≥25
1351	Tetrahydrofurfuryl alcohol (2-Hydroxymethyltetrahydrofuran)		≥10
1445	3,5,5-Trimethyl-2-cyclohexen-(1)-on		≥25

Chart Two: Classed List of Surface Treatment Agents (paints, varnishes, lacquers, preservatives, inks, adhesives, and similar preparations)

Highly Toxic and Toxic Materials

Number from Chart VI	Name of Substance	Concentration at which the given symbol is part of labelling	
	A. Heavy Metal Compounds		
		T	Xn
89	Arsenic pentoxide, acids of arsenic, and their salts arsenites, arsenates	>0.2	0.1 - 0.2
90	Arsenic compounds	>0.2	0.1 - 0.2
163	Lead alkyls	>0.1	0.05 - 0.1
1280	Mercury alkyls	>0.1	0.05 - 0.1
1282	Inorganic compounds of mercury, excepting Mercury(II) sulfide (Cinnabar)	>0.5	0.1 - 0.5
1283	Organic compounds of mercury	>0.5	0.05 - 0.5
	B. Other Substances		
17	Acrylonitrile	>1.0	0.2 - 1.0
844	Alkali hexafluorosulphate (Na, K, NHsub4)	>10.0	1.0- 10.0
149	1,3-Bis (2,3-epoxypropoxy) benzene (Resorcinol diglycidyl ether)	>0.1	0.025-0.1
282	1-Chloro-2,3-epoxy-propane (Epichlorhydrine)	>0.1	0.025-0.1
495	Dicyclohexylmethane-4,4'-diisocyanate	>2.0	0.5 - 2.0
497	1,2,3,4-Diepoxybutane (butadiene diepoxide)	>0.1	0.025-0.1
505	N,N-Diethyl anilin	>5.0	1.0 - 5.0

Table 2-1 (continued)

Number from Chart VI	Name of Substance	Concentration at which the given symbol is part of labelling	
510	Diethylene glycol diacrylate	>2.0	0.2 - 2.0
542	2,4-Diisocyanate-toluene (1) 2,6-Diisocyanate-toluene (2) Mixtures of 1 & 2	>2.0	0.5 - 2.0
569	N,N-Dimethyl aniline	>5.0	1.0 - 5.0
618	2,2-Dimethylpropandiol-1,3-diacrylate (Neopentylglycoldiacrylate)	>5.0	0.2 - 5.0
621	N,N-Dimtheyltoluidine	>5.0	1.0 - 5.0
686	1-Epoxyethyl-3,4-epoxycyclohexane (Vinylcyclohexane diepoxide)	>0.1	0.025-0.1
692	2,3-Epoxy-1-propyl alcohol (Glycidol)	>5.0	1.0 - 5.0
693	2,3-Epoxypropylacrylate (Glycidyl acrylate)	>2.0	0.2 - 2.0
803	Hydrogen fluoride (hydrofluoric acid)	>0.5	
806	Formaldehyde	5.0 - 30.0	
807	Formaldehyde	>25.0	
849	Hexamethylene-1,6-diisocyanate	>2.0	0.5 - 2.0
863	2-Hydroxy-ethyl-acrylate	>2.0	0.2 - 2.0
871	Hydroxypropylacrylate (mixture)	>2.0	0.2 - 2.0
885	3-Isocyanate methyl-3,5,5-trimethyl-cyclohexylisocyanate (Isophorondiisocyanate)	>2.0	0.5 - 2.0
927	Potassium nitrite	>5.0	1.0 - 5.0
977	Methacrylonitrile (2-Methyl-2-propennitrile)	>1.0	0.2 - 1.0
1019	2,2'-Methylene-bis-(3,4,6-trichlorphenol) (Hexachlorophene)	>2.0	0.2 - 2.0
1066	Monochloracetic acid	>5.0	0.5 - 5.0
1108	Sodium nitrite	>5.0	1.0 - 5.0
1166	Pentachlorophenol	>5.0	0.5 - 5.0
1167	Alkali salts of pentachlorophenol	>5.0	0.5 - 5.0
1189	Phenylenediamine	>5.0	1.0 - 5.0
1343	2,3,4,6-Tetrachlorophenol	>5.0	0.5 - 5.0
1368	Thioglycolic acid	>2.0	0.2 - 2.0
1441	Triorthocresylphosphate (mixtures with more than 1% esterified o-cresol)	>1.0	0.2 - 1.0
1446	2,2,4-Trimethylhexamethylene-1,6-diisocyanate(1) 2,2,4-Trimethylhexamethylene-1,6-diisocyanate(2) Mixtures of (1) and (2)	>2.0	0.5 - 2.0

Relatively Less Toxic Substances

Number from Chart VI	Name of Substance	Concentration at which the given symbol is part of labelling
	A. Heavy metal compounds soluble in HCl 0.07 N	
86	Antimony compounds, excepting antinomy trioxide, diantinomy trioxide, diantinomy pentoxide, diantinomy trisulfide, diantinomy pentasulfide	≥ 0.25
111	Barium salts, excepting Barium sulfate	≥ 1.0
165	Lead compounds	≥ 1.0
243	Cadmium compounds, excepting cadmium sulfide, cadmium selenosulfide, and mixtures of cadmium sulfide and zinc sulfide, as well as mixtures of cadmium sulfide and mercury sulfide	≥ 0.1
	B. Heavy metal compounds	
1389	Tributyltin aphthenate	≥ 2.0
1390	Tributyltin linoleate	≥ 2.0
1391	Tributyltin oleate	≥ 2.0
1423	Tricyclohexyltin compounds	≥ 1.0
1436	Trihexyltin compounds	≥ 1.0
1455	Tripentyltin compounds	≥ 1.0

Table 2-1 (continued)

Number from Chart VI	Name of Substance	Concentration at which the given symbol is part of labelling
	C. Other substances	
35	1-Allyloxy-2,3-epoxypropane (Allylglycidyl ether)	≥ 1.0
150	1,4-Bis-(2,3-epoxypropoxy)butane (1,4-Butandiol-diglycidyl ether)	≥ 1.0
207	1-Butoxy-2,3-epoxypropane	≥ 1.0
299	4-Chlor-3-methylphenol (4-Chlor-m-cresol)	≥ 5.0
413	Diallyl phthalate	≥25.0
457	Dichlorisocyanuric acid, sodium salt Dicholorisocyanuric acid, potassium salt	≥10.0
494	Dicyclohexyl ammonium nitrite	≥10.0
503	2-Diethylaminoethyl methacrylate	≥10.0
537	1,3-Dihydroxybenzene (Resorcinol)	≥10.0
85	2-Dimethylaminoethyl methacrylate	≥10.0
655	Diphenylmethane-4,4'-diisocyanate (1) Diphenylmethane-2,4'-diisocyanate (2) Diphenylmethane-2,2'-diisocyanate (3) Mixtures of (1), (2), and (3)	≥ 2.0
656	4,4'-Diphenylmethane diisocyanat, isomers, homologues, mixtures	≥ 2.0
689	1,2-Epoxy-3-phenoxypropane (Phenylglycidyl ether)	≥ 1.0
694	2,3-Epoxypropyl methacrylate	≥10.0
845	Hexafluorosilicate	≥ 3.0
1040	1-Methyl-5-norbornen-2,3-dicarbonacetic anhydride	≥10.0
1048	2-Methylpropyl acrylate	≥10.0
1140	2-Norbornyl acrylate	≥10.0
1148	Oxalic acid	≥ 5.0
1149	Oxalic acid salts	≥ 5.0
1411	2,4,5-Trichlorophenol 2,4,6-Tricholorphenol	≥ 5.0
1437	1,2,3-Trihydroxybenzene (pyrogallol)	≥10.0
1442	Tricresyl phosphates (mixtures with no more 1% esterified o-cresol)	≥ 5.0
1462	Tris(2-chlorethyl) phosphate	≥25.0

Table 2-1 (continued)

Corrosive Substances

No. in Chart VI	Name of Substance	Concentration at which given Symbol is Assigned	
		C	Xi
	A. Acids		
18	Acrylic acid	>25.0	2.0 - 25.0
43	Formic acid	>25.0	10.0 - 25.0
706	Acetic acid	>25.0	10.0 - 25.0
803	Hydrogen fluoride (hydrofluoric acid)	> 0.5	0.1 - 0.5
843	Fluorosilicic acid (hydrofluodisilicic acid)	>25.0	10.0 - 25.0
978	Methacrylic acid	>25.0	2.0 - 25.0
1181	Peroxyacetic acid	>10.0	2.0 - 10.0
1209	Phosphoric acid	>25.0	10.0 - 25.0
1249	Propionic acid	>25.0	10.0 - 25.0
1291	Nitric acid	>20.0	5.0 - 20.0
1294	Hydrochloric acid	>25.0	10.0 - 25.0
1301	Sulfuric acid	>15.0	5.0 - 15.0
1349	Tetrafluoroboric acid (borofluoric acid)	>25.0	10.0 - 25.0
1377	p-toluenesulfonic acid (with more than 5% H_2SO_4)	>25.0	10.0 - 25.0
1400	Trichloroacetic acid	> 5.0	1.0 - 5.0
1433	Trifluoroacetic acid	>10.0	2.0 - 10.0
	B. Caustics		
65	Dilute ammonia	>35.0	10.0 - 35.0
924	Potassium hydroxide (caustic potash)	> 5.0	1.0 - 5.0
1100	Sodium hydroxide (caustic soda)	> 5.0	1.0 - 5.0

Table 2-1 (continued)

No. in Chart VI	Name of Substance	Concentration at which given Symbol is Assigned	
		C	Xi
	C. Other Substances		
70	Ammonium biflouride	> 1.0	0.1 - 1.0
71	Ammonium polysulfides	> 5.0	1.0 - 5.0
97	3-Azapentane-1,5-diamine (Diethylene triamine)	>10.0	1.0 - 10.0
95	4-Azaheptane-1,7-diamine	>10.0	1.0 - 10.0
198	1,3-Butanediol diacrylate	>10.0	1.0 - 10.0
199	1,4-Butanediol diacrylate	>10.0	1.0 - 10.0
339	Chromium trioxide (chromic anhydride)	> 5.0	0.5 - 5.0
378	Cyclohexylamine	>10.0	2.0 - 10.0
415	1,2-Diaminoethane (ethylene diamine)	>10.0	2.0 - 10.0
420	3,6-Diazaoctane-1,8-diamine (Triethylene tetramine)	>10.0	1.0 - 10.0
493	Dicyclohexylamine	>10.0	2.0 - 10.0
508	N,N-Diethyl-1,3-diaminopropane (3-Diethylaminopropylamine)	>10.0	1.0 - 10.0
580	N,N-Dimethyl-1,3-diaminopropane (3-Dimethylaminopropylamine)	>10.0	1.0 - 10.0
708	Acetic anhydride	>20.0	8.0 - 20.0
891	Isophorone diamine (3-Aminomethyl-3,5,5-trimethyl-cyclohexylamine)	>10.0	2.0 - 10.0
923	Potassium hydrogen difluoride	> 1.0	0.1 - 1.0
1076	Morpholine	>10.0	1.0 - 10.0
1099	Sodium hydrogen difluoride	> 1.0	0.1 - 1.0
1230	Polyethylene amine (chains of length C4 to C16)	>10.0	2.0 - 10.0
1336	3,6,9,12-Tetraazatetradecane-1,14-diamine (Pentaethylene hexamine)	>10.0	2.0 - 10.0
1385	3,6,9-Triazaundecane-1,11-diamine	>10.0	1.0 - 10.0

Table 2-1 (continued)

Irritants

No. in Chart VI	Name of Substance	Concentration at which given Symbol is Assigned
16	Acrylates	≥10.0
57	2-Amino-2-methyl-propyl alcohol	≥10.0
68	Ammonium dichromate	≥10.0
126	3,3,4,4'-Benzophenone tetracarbonic acid anhydride (4,4'-Carbonyl diphthalic acid anhydride)	≥ 1.0
138	Succinic acid anhydride	≥ 1.0
1022	2,2-Bis-[4-(2,3-epoxypropoxy)-phenyl]-propane (Bis(4,4'-glycidyloxyphenol)-propane)	≥ 1.0
157	Bisphenol-A - Epichlorhydrine reaction product (epoxy resin with an average molecular weight of 700 or less)	≥ 1.0
218	2-tert-Butylaminoethylmethacrylate	≥10.0
373	1,2-Cyclohexane dicarbonic acid anhydride (Hexahydrophthalic acid anhydride)	≥ 1.0
377	Cyclohexyl acrylate	≥10.0
383	1,2,3,4-Cyclopentane tetracarbonic acid anhydride	≥ 1.0
498	Diethanol amine	≥10.0
695	1,2-Epoxy-3-(tolyloxy)-propane (Cresol glcydyl ether)	≥ 2.0
711	Ethane-1,2-dioldimethacrylate (Ethylene glycol dimethacrylate)	≥10.0
730	Ethyl acrylate	≥ 5.0
745	1-(2-Ethylcyclohexanoxy)-2,3-epoxypropane (Ethylcyclohexylglycidylether)	≥ 2.0
763	2-Ethylhexyl acrylate	≥ 1.0
823	Glyoxal	≥10.0
841	1,4,5,6,7,7-Hexachlorobicyclo-[2.2.1]-5-hept-5-en-2,3-dicarbonic acid anhydride	≥10.0
851	1,6-Hexandiol diacrylate	≥ 1.0
864	2-Hydroxyethyl methacrylate	≥ 1.0
872	Hydroxypropyl methacrylate (mixture)	≥10.0
920	Potassium chromate	≥ 0.5
921	Potassium dichromate	≥ 0.5
954	Maleic anhydride	≥ 1.0
976	Methacrylates	≥10.0
995	Methacrylate	≥ 5.0
1036	Methyl methacrylate	≥10.0
1051	2-Methyl methacrylate	≥10.0

Table 2-1 (continued)

No. in Chart VI	Name of Substance	Concentration at which given Symbol is Assigned
1059	Methyl trichlorsilane	≥ 1.0
1095	Sodium dichromate	≥ 0.5
1139	5-cis-Norbornen-2,3-dicarbonic acid anhydride	≥ 1.0
1168	Pentaerythrittetraacrylate	≥ 1.0
1169	Pentaerythrittriacrylate	≥ 1.0
1217	Phthalic acid anhydride	≥ 5.0
1278	Pyromellitic dianhydride	≥ 1.0
1354	Tetrahydrophthalic acid anhydride	≥ 1.0
1378	p-toluenesulfonic acid (with no more than 5% H_2SO_4)	≥ 75.0
1374	4-Toluenesulfonyl isocyanate (Tosylisocyanate)	≥ 4.0
1427	Triethyleneglycol diacrylate	≥ 1.0
1438	1,1,1-Trihydroxymethylpropyl triacrylate (Trimethylopropane triacrylate)	≥ 1.0
1443	Trimellitic acid anhydride (1,2,4-Benzenetricarbonic acid anhydride)	≥ 0.3
1452	Trioctyl tin compounds	≥ 1.0
1456	Triphenyl phosphite	≥ 5.0

Chart Three: List of Carcinogenic Hazardous Materials

No. in Chart VI	Carcinogenic Hazardous Material	Group I Acutely Hazardous	Group II Highly Hazardous	Group III Hazardous
		Content by Weight in the Hazardous Material in %		
17	Acrylonitrile		≥1	<1-0.1
48	o-aminoazotoluene		≥0.1	<0.1-0.01
55	4-aminobiphenyl	≥1	<1-0.1	<0.1-0.01
1495	Salts of 4-aminobiphenyl	≥1	<1-0.1	<0.1-0.01
85	Antimony trioxide		≥1	<1-0.1
89	Arsenic pentoxide, arsenous acid, arsenic acid, and their salts (arsenites, arsenates)		≥3	<3-0.3
91	Asbestos (respirable)			
	Chrysotile		≥2	<2-0.2
	Amphibole asbestos (Actinolite, amosite, anthophyllite, crocidolite, tremolite)	≥0.5	<0.5-0.05	<0.05-0.005
120	Benzidine (4,4'-diaminobiphenyl)	≥1	<1-0.1	<0.1-0.01
121	Salts of Benzidine	≥1	<1-0.1	<0.1-0.01
123	Benzene		≥1	
127	Benzopyrene		≥0.1	<0.1-0.0005
139	Beryllium (respirable)		≥1	<1-0.1
140	Beryllium compounds (friable)		≥1	<1-0.1
144	Bis(chloromethyl)ether	≥0.05	<0.05-0.005	<0.005-0.0005
194	1,3-butadiene			≥1
236	Cadmium chloride (respirable)	≥1	<1-0.1	<0.1-0.01
246	Calcium chromate (respirable)		≥1	<1-0.1
282	Epichlorohydrin			≥1
291	n-chloroformyl-morpholine		≥0.005	<0.005-0.0005
1519	Chloromethyl methyl ether (Chlorodimethyl ether)	≥1	<1-0.1	<0.1-0.01
336	Chrome (III) chromates (respirable)		≥1	<1-0.1
343	Cobalt (respirable; not including alloys) (as cobalt metal, cobalt oxide, and cobalt sulfide)		≥1	<1-0.1
1523	Arsenic trioxide		≥3	<3-0.3
422	Diazomethane		≥1	<1-0.1
423	1,2-dibromo-3-chloropropane		1	<1-0.1
425	Ethylene dibromide		≥1	<1-0.1

Table 2-1 (continued)

No. in Chart VI	Carcinogenic Hazardous Material	Group I Acutely Hazardous	Group II Highly Highly	Group III Hazardous
		Content by Weight in the Hazardous Material in %		
438	Dichloracethylene		≥1	<1-0.1
440	3,3'-dichlorobenzidine		≥1	<1-0.1
450	Ethylene chloride			≥1
1524	Salts of 3,3'-dichlorobenzidine		≥1	<1-0.1
445	1,4-dichlorobutene-2		≥0.1	<0.1-0.01
1525	2,2'-dichloro-4,4'-methylene dianiline [4,4'-methylene-bis(2-chloroaniline)		≥1	<1-0.1
1526	Salts of 2,2'-dichloro-4,4'-methylene dianiline [salts of 4,4'-methylene-bis(2-chloroaniline)		≥1	<1-0.1
530	Diethyl sulfate			≥1
553	3,3'-dimethoxybenzidine (o-dianisidin)		≥0.5	<0.5-0.05
1533	Salts of 3,3'-dimethoxybenzidine (salts of o-dianisidin)		≥0.5	<0.5-0.05
570	3,3'-dimethylbenzidine (o-tolidin)		≥0.5	<0.5-0.05
1536	Salts of 3,3'-dimethylbenzidine (Salts of o-tolidin)		≥0.5	<0.5-0.05
575	Dimethyl carbamoyl chloride	≥0.05	<0.05-0.005	<0.005-0.0
579	3,3'-dimethyl-4,4'-diaminodiphenylmethane		≥1	<1-0.1
591	n,n-dimethylhydrazine			≥5
592	1,2-dimehtylhydrazine		≥0.1	<0.1-0.01
610	Dimethylnitrosamine (n-nitrosodimethylamine)	≥0.01	<0.01-0.001	<0.001-0.0001
619	Dimethylsulfamoyl chloride			≥1
620	Dimethyl sulfate		≥1	<1-0.1
690	1,2-propylene oxide			≥1
740	Urethane		≥1	<1-0.1
756	Ethyleneimine		≥1	<1-0.1
757	Ethylene oxide			≥0.1
850	Hexamethylphosphorictriamide (Bempa)	≥0.05	<0.05-0.005	<0.005-0.000t
857	Hydrazine			≥5
1555	Propyleneimine		≥1	<1-0.1
1085	2-naphthylamine	≥1	<1-0.1	<0.1-0.01
1563	Salts of 2-naphthylamine	≥1	<1-0.1	<0.1-0.01

Table 2-1 (continued)

No. in Chart VI	Carcinogenic Hazardous Material	Group I Acutely Hazardous	Group II Highly Highly	Group III Hazardous
		Content by Weight in the Hazardous Material in %		
1118	Nickel (respirable, not including alloys) (as metal, nickel sulfide and sulfidic ores, nickel oxide, and nickel carbonate), as well as nickel compounds in the form of respirable droplets		≥5	<5-0.5
	Nickel carbonyl		≥1	<1-0.1
1123	5-nitroacenaphthene		≥1	<1-0.1
1127	4-nitrodiphenyl	≥1	<1-0.1	<0.1-0.01
1130	2-nitronaphthaline		≥1	<1-0.1
1134	2-nitropropane		≥1	<1-0.1
1241	1,3-propansulton [=sulfone?]	≥1	<1-0.1	<0.1-0.01
1571	1,3-propiolactone		≥1	<1-0.1
1314	Strontium chromate (respirable)		≥1	<1-0.1
1399	2,3,4-tricholorobutene-1		≥0.1	<0.1-0.01
1472	Vinyl chloride		≥1	<1-0.1
1485	Zinc chromates (including respirable zinc potassium chromate		≥1	<1-0.1
Also subject to the relevant restrictions are:				
	Acrylamide		≥1	<1-0.1
	2-amino-4-nitrotoluene			≥2
	Auramine (commercial grade)		≥1	
	2,4-butane sulton [=sulfone?]		<1-0.1	<0.1-0.01
	Chlorofluoromethane		≥1	<1-0.1
	4-chlor-o-toluidine		≥0.1	<0.1-0.01
	Chrome (VI)compounds in the form of dusts or aerosols			
	very easily soluble in water (i.e. $Na_2Cr_2O_7$, CrO_3)			≥1
	not very easily soluble in water (i.e. Ca-, Cr-, Sr-, Zn-chromates), with the exception of those that are for all practical purposes not water-soluble (i.e. Pb- and Ba-chromates)		≥1	<1-0.1
	2,4-diaminoanisol			≥1

Table 2-1 (continued)

No. in Chart VI	Carcinogenic Hazardous Material	Group I Acutely Hazardous	Group II Highly Highly	Group III Hazardous
		Content by Weight in the Hazardous Material in %		
	4,4'-diaminodiphenylmethane and -dihydrochloride			≥1
	2,4-diaminotoluene			≥1
	2,2'-dichlorodiethylsulfide		≥0.1	<0.1-0.01
	1,3-dichloropropene (cis- & trans)		≥1	<1-0.1
	Diesel motor emissions		No concentration listed	
	2,6-dinitrotoluene		≥1	<1-0.1
	n-methyl-bis(2-chloroethyl)amine		≥0.1	<0.1-0.01
	4,4'-mehttttyl-bis(n,n-dimethylaniline)			≥5
	n-nitrosodiethanolamine	≥0.05	<0.05-0.005	<0.005-0.0005
	n-nitrosodiethylamine	≥0.01	<0.01-0.001	<0.001-0.0001
	n-nitrosodi-i-propylamine	≥0.05	<0.05-0.005	<0.005-0.0005
	n-nitrosodi-n-butylamine	≥0.01	<0.01-0.001	<0.001-0.0001
	n-nitrosodi-n-propylamine	≥0.01	<0.01-0.001	<0.001-0.0001
	n-nitrosoethylphenylamine	≥0.01	<0.01-0.001	<0.001-0.0001
	n-nitrosomethylethylamine	≥0.01	<0.01-0.001	<0.001-0.0001
	n-nitrosomethylphenylamine	≥0.01	<0.01-0.001	<0.001-0.0001
	n-nitrosomorpholine	≥0.01	<0.01-0.001	<0.001-0.0001
	n-nitrosopiperidine	≥0.01	<0.01-0.001	<0.001-0.0001
	n-nitrosopyrrolidine	≥0.05	<0.05-0.005	<0.005-0.0005
	4,4'-oxidianiline (ODA)		≥1	<1-0.1
	2,3,7,8-tetrachlorodibenzo-p-dioxin		≥0.000001	<0.000001-0.0000002
	4,4'-thiodianiline (THDA)		≥1	<1-0.1
	o-toluidine		≥1	<1-0.1
	2,4,5-trimethylaniline		≥1	<1-0.1
	4,vinyl-1,2-cyclohexene-diepoxide		≥1	<1-0.1

Chart Four: Classed List of Substances Containing Ammonium Nitrate

Group A consists of ammonium nitrate and preparations that are capable of decomposing with such rapidity as to produce detonation.

Group B consists of preparations that are capable of self-sustaining, progressive, thermal decompostion.

Group C consists of preparations that are neither capable of self-sustaining, progressive, thermal decomposition nor of detonation, but that do produce nitric oxides when heated.

Group D consists of preparations that are not dangerous in solution with water or in suspension but that are capable of detonating when in the form of crystals.

Inert materials are those that do not enhance sensitivity to heat or sensitivity to detonation.

The preparations in Groups B and C must be finely dispersed and well mixed, and they may not separate during storage, transport, or transfer. In order to improve their storability and dispersibility, combustible components may be applied to the surface of the grains up to the amount of 0.4 parts per hundred by weight.

Subgroups	Concentration of Ammonium Nitrate by Weight	Other Components	Special Provisions
A I	≥90	Chloride content ≤0.02% ≤10% inert substances	No other ammonium salts permitted
A II	>80 to <90	limestone, dolomite, or calcium carbonate <20%	
A III	>45 to <90	Ammonium sulfate	
A IV	>70 to <90	Potassium salts, phosphates in NP-, NK-, or NPK-fertilizers; inert materials	

Table 2-1 (continued)

Subgroups	Concentration of Ammonium Nitrate by Weight	Other Components	Special Provisions
B I	≤70	Potassium salts, phosphates, inert materials, and other ammonium salts in NK- or NPK-fertilizers	When the concentration of ammonium nitrate by weight exceeds more than 45%, the concentration of ammonium nitrate and other ammonium salts may not exceed 70%
B II	≤45%	Surplus nitrates ≤10%	Content of combustible materials unlimited. Excess nitrates that exceed the content of ammonium nitrate are calculated as potassium nitrate
C I	≤80	limestone, dolomite, or calcium carbonate ≥20%	limestone, dolomite with a minimal purity of 90%
C II	≤70%	inert materials	
C III	≤45	Phosphate and other ammonium salts in NP-fertilizers	
	>45 to 70 ammonium salts in NP-fertilizers	Phosphates and other ammonium nitrate and other ammonium salts may not	Concentration of exceed 70%
C IV	≤45	ammonium sulfate	
D I	≤45	urea, water	in aqueous solution
D II	≤45	Excess nitrates ≤10%, Calcium salts, phosphates, and other ammonium salts in NP-, NK-, or NPK-fertilizers; water	in aqueous solution or suspension Excess nitrates calculated as potassium nitrate..... The limits in Column 2 man not be exceeded either in the fluid state, nor for suspensions, in the solid state.
D III	≤70	ammonia, water	in aqueous solution

Chart Five: Precautionary Examinations

Hazardous Material	Deadline and Time spans (in mo) First Subsequent Examination	Further Examinations
Acrylonitrile	12 - 24	12 - 24
Aromatic nitro- and amino-compounds	6 - 9	6 - 12
Arsenic trioxide Arsenic pentoxide Arsenious acid Arsenic acid and its salts (Arsenites, arsenates)	6	12
Asbestos	12 - 36	12 - 36
Asphalts	24 - 36	24 - 36
Benzene	2	3 - 6
Benzopyrene	24 - 36	24 - 36
Blasting media	36	36
Cadmium and its compounds	12 - 18	12 - 24
Calcium chromate	6 - 9	12 - 24
Carbon disulfide	3 - 6	6 - 18

Table 2-1 (continued)

Hazardous Material	Deadline and Time spans (in mo) First Subsequent Examination	Further Examinations
Carbon monoxide: Subsequent examinations are necessary only if the worker believes there is a causal connection between illness and workplace and if the worker desires to be be examined.		
Chloromethane	3 - 6	12 - 18
Chrome-III-chromates	6 - 9	12 - 24
Chrome(VI)compounds, except calcium chromate, chrome(III)chromates, strontium chromate, zinc chromate	6 - 9	12 - 24
Fluorine and its inorganic compounds	12	12
Hydrogen sulfide	6 - 12	12 - 24
Isocyanates	3 - 6	12 - 24
Mercury - Alkyl-mercury compounds	3 - 6	6 - 12
- mercury and other mercury compounds	6 - 9	6 - 12
Methyl iodide	60	60
Methyl alcohol	12 - 18	12 - 24

Table 2-1 (continued)

Hazardous Material	Deadline and Time spans (in mo) First Subsequent Examination	Further Examinations
Nickel compounds in the form of breathable drops	12 - 24	12 - 24
Nickel in the form of breathable dusts of nickel, nickel sulfide, and sulfidic bronzes, nickel oxide, and nickel carbonate	36 - 60	36 - 60
Nickel tetracarbonyl	12 - 24	12 - 60
Nitroglycerine or nitroglycol	3 - 6	6 - 18
Silicone dusts	36	36
Tar oils in bitumen	24 - 36	24 - 36
Tars	24 - 36	24 - 36
Tetrachloroethylene, perchloroethylene	12 - 18	12 - 24
Tetraethyl lead	3 - 6	6 - 12
Tetramethyl lead	3 - 6	12 - 24
Thomas phosphate	2	2nd and 3rd: 2; others 12
Toluene	12 - 18	12 - 24

Table 2-1 (continued)

Hazardous Material	Deadline and Time spans (in mo) First Subsequent Examination	Further Examinations
Treatment of surfaces in rooms or containers	time periods established by physician	
Trichloroethylene	12 - 18	12 - 24
Pentachloroethane	3 - 6	6
Strontium chromate	6 - 9	12 - 24
Tetrachloroethane	3 - 6	6
Carbon tetrachloride	3 - 6	6
Vinyl chloride	6 - 12	12 - 24
White Phosphorous	6 - 9	12 - 18
Xylenes	12 - 18	12 - 24
Zinc chromate	6 - 9	12 - 24
Other carcinogens	60	60
Lead or its compounds (except tetraethyl lead and tetramethyl lead)		

Table 2-1 (continued)

	First Examination		Subsequent Examinations	
	By physician	Bioassay	By physician	Bioassay
Concentration in the air above 75 micrograms ($\mu g/m^3$) or Concentration in the blood between 50 and 60 $\mu g/100$ ml	6	12	6	12
Concentration in the air between 75 and 100 $\mu g/m^3$ and Concentration in the blood up to 50 $\mu g/100$ ml	12	12	6	12
Concentrations in the blood over 60 $\mu g/100$ ml to 70 $\mu g/ml$	immediately	6	12	6

Table 2-1 (continued)

Chart Six: Classed List of Hazardous Substances and Preparations (GefStoffV Appendix VI)

(NOTE: Entries marked with a "δ" have been deleted from the list as a result of recent legislation; those marked with "N" are to be replaced by the newer formulations listed in the last pages of the Chart prior to Number 1585. Numbers 1585 through 1618 are new additions to the Classed List.)

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1	scephat *Vgl. 560* O,S-Dimethyl-acetamid-thiophosphat	015-079-00-7 *30560-19-1*	Xn	20/21/22	2-13	I 2.3 I 2.4		IIc			ja	Xn
2	Acetal *Siehe: 499* 1,1-Diethoxy-ethan											
N 3	Acetaldehyd	605-003-00-6 *75-07-0*	F,Xi	12-36/37	9-16-29-33							
4	7-Acetamido-1,2,3,10-tetramethoxy-5,6,7,9-tetrahydrobenzo[a]heptalen-9-on *Siehe: 344* Colchicin											
5	Acetanhydrid *Siehe: 708* Essigsäureanhydrid											
6	Aceton	606-001-00-8 *67-64-1*	F	11	9-16-23-33							
7	Acetoncyanhydrin *Siehe: 387* 2-Cyanopropan-2-ol											
8	Acetonitril	608-001-00-3 *75-05-8*	F,T	11-23/24/25	16-27-44	I 2.1		Ic			ja	T,Xn
9	Acetylchlorid	607-011-00-5 *75-36-5*	F,C	11-14-34	9-16-26							

Lfd Nr	Stoffidentität: Bezeichnung	Stoffidentität: EG-Nummer CAS-Nummer	Kennzeichnung Stoff: Kennb. Gef.-Symbol	Kennzeichnung Stoff: Kennziffer für R-Sätze	Kennzeichnung Stoff: Kennziffer für S-Sätze	Kennzeichnung Zubereitungen: Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
10	Acetylen *Vgl. 717* Ethin	601-015-00-0 *74-86-2*	F	5-6-12	9-16-33							
11	Acetylentetrabromid *Siehe: 1337* 1,1,2,2-Tetrabromethan											
12	Aconitin	614-008-00-2 *302-27-2*	T	26/28	1-24-45	I 2.4	>0,1	>0,01-0,1			ja	T,Xn
13	Aconitin-Salze *Anm. A*	614-009-00-8	T	26/28	1-24-45	I 2.4	>0,1	>0,01-0,1			ja	T,Xn
14	Acrolein *Siehe: 1244* 2-Propenal											
15	Acrylamid	616-003-00-0 *79-06-1*	T	23/24/25-33	27-44						ja	T
16	Acrylate, soweit nicht aufgeführt *Anm. A*	607-133-00-9	Xi	36/37/38	26-28	I 2.2				≥ 10		
17	Acrylnitril *Anm. D,E*	608-003-00-4 *107-13-1*	F,T	45-11-23/24/25-38	53-16-27-44	I 2.2 I 2.4 II	> 1	0,2-1			ja ja	T,Xn T,Xn
18	Acrylsäure *Anm. D*	607-061-00-8 *79-10-7*	C	10-34	26-36	I 2.2			>25	2-25		
19	Ätzkali *Siehe: 524* Kaliumhydroxid											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
20	Ätznatron *Siehe: 1108* Natriumhydroxid, wasserfrei											
21	Agarizin	*606-59-9*	T	24/25	1-44	I 2.4					ja	T,Xn
22	alachlor	*15972-60-8*				I 2.3		IId				
23	aldicarb *Vgl. 1638* 2-Methyl-2-methylthio-propionaldehyd-O-(N-methyl-carbamoyl)-oxim	006-017-00-X *116-06-3*	T	26/27/28	1-13-28-45	I 2.3 I 2.4					ja	T,Xn
24	Aldrin (ISO) *Vgl. 839* (1R,4S,4aS,5S,8R,8aR)-1,2,3,4,10,10-Hexachlor-1,4,4a,5,8,8a-hexahydro-1,4:5,8-dimethanonaphthalin	602-048-00-3 *309-00-2*	T	24/25-40-48	22-36/37-44	I 2.3 I 2.4	Ib				ja	T,Xn
25	Alkaliethylate *Anm. A*	603-041-00-8 *16331-64-9(-)*	F,C	11-14-34	8-16-26-43							
26	Alkalimethylate *Anm. A*	603-040-00-2 *3315-60-4(-)*	F,C	11-14-34	8-16-26-43							
27	allethrin *Vgl. 36* (+-)-(3-Allyl-2-methyl-4-oxo-cyclopent-2-enyl)-[2,2-dimethyl-3-(2'-methyl-prop-1'-enyl)]-cyclopropancarbonat	006-025-00-3 *584-79-2*	Xn	20/21/22	2-13	I 2.3 I 2.4		IIc			ja	Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennzeichen für R-Sätze	Kennzeichen für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
28	allidochlor *Vgl. 412* N,N-Diallyl-chlor-acetamid	616-004-00-6 *93-71-9*	Xn	20/21/22-36/38	2-13	1 2.3		IIc			ja	Xn
29	Allylalkohol *Siehe: 1246* 2-Propen-1-ol											
30	Allylamin	612-046-00-4 *107-11-9*	F,T	11-23/24/25	9-16-24/25-44						ja	T
31	Allylchlorid *Siehe: 324* 3-Chlorpropen											
32	Allylglycidylether *Siehe: 35* 1-Allyloxy-2,3-epoxy-propan											
33	Allyljodid *Siehe: 912* 3-Jodpropen											
34	(+-)-(3-Allyl-2-methyl-4-oxo-cyclopent-2-enyl)-[2,2-dimethyl-3-(2'methyl-prop-1'-enyl)]-cyclopropancarbonat *Siehe: 27* allethrin											
35	1-Allyloxy-2,3-epoxy-propan *Vgl. 32* Allylglycidylether	603-038-00-1 *106-92-3*	Xn	20-43	24/25	1 2.2		≥ 1				

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 36
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
36	ätherisches Allylsenföl *Siehe: 1309* Senföl											
37	Aluminiumalkyle; C1 bis C5 Kettenlänge *Anm. A*	013-004-00-2	F,C	14-17-34	16-43							
38	Aluminiumchlorid wasserfrei	013-003-00-7 *7446-70-0*	C	34	7/8-28							
39	Aluminiumphosphid	015-004-00-8 *20859-73-8*	F,T	15/29-28	1/2-22-43 -45	1 2 3 1 2 4	Ia				j8 j8	T,Xn T,Xn
40	Aluminiumpulver (nicht stabilisiert)	013-001-00-6 *7429-90-5*	F	15-17	7/8-43							
41	Aluminiumpulver (phlegmatisiert)	013-002-00-1		10-15	7/8-43							
42	Aluminium-triisopropylat	603-042-00-3 *555-31-7*	F	11	8-16							
43	Ameisensäure, >90% *Anm. B*	607-001-00-0 *64-18-6*	C	35	2-23-26	1 2 2			> 25	10-25		
44	Ameisensäure, 25-90% *Anm. B*	607-001-01-8 *64-18-6*	C	34	2-23-26							
45	ametryn *Vgl 733* 2-Ethylamino-4-isopropylamino-6-methylthio-1,3,5-triazin	613-010-00-0 *834-12-8*	Xn	20/22	2-13	1 2 3		IId				
46	amidithion *Vgl 593* O,O-Dimethyl-S-[(N-2-methoxy-ethyl)-carbamoyl methyl]-dithiophosphat	015-080-00-2 *919-76-6*	Xn	20/21/22	2-13	1 2 3		IIb			j8	Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Konzn.-Grenzen in % bzw. Klasse						
Lfd. Nr	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 26
1	2	3	4	5	6	7	8				9	10
47	Amidosulfonsäure *Vgl. 1321* Sulfaminsäure	016-026-00-0 *5329-14-6*	Xi	36/38	2-26-28							
48	o-Aminoazotoluol *Anm. K*	*97-56-3*				II						
49	2-Amino-benzidin	612-045-00-9 *2835-69-0*	Xn	20/21/22	22-36							
50	3-Amino-benzolsulfonsäure *Vgl. 975* Metanilsäure	612-013-00-4 *121-47-1*	Xn	20/21/22	25-28							
51	4-Amino-benzolsulfonsäure *Vgl. 1322* Sulfanilsäure	612-014-00-X *121-57-3*	Xn	20/21/22	25-28							
52	1-Amino-butan *Vgl. 217* n-Butylamin	612-005-00-0 *109-73-9*	F,Xi	11-36/37/38	16-26-29							
53	2-Amino-butan	612-052-00-7 *13952-84-6*	F,Xn	11-20/21/22	13-16-29	I 2.3		IIa				
54	aminocarb *Vgl. 587* (4-Dimethylamino-3-methyl-phenyl)-N-methyl-carbamat	006-018-00-5 *2032-59-9*	T	23/24/25	2-13-44	I 2.3 I 2.4	Ib				ja	T,Xn
55	4-Aminobiphenyl *Anm. E*	612-072-00-6 *92-67-1*	T	45-22	53-44	II					ja	T
56	2-Amino-ethanol *Vgl. 713* Ethanolamin	603-030-00-8 *141-43-5*	Xi	20-36/37/38								

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kenn.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
57	2-Amino-2-methylpropanol	603-070-00-6 *124-68-5*	Xi	36/38		I 2.2				≥ 10		
58	3-Aminomethyl-3,5,5-trimethylcyclohexylamin *Siehe 891* Isophoron diamin											
59	Aminophenol *Anm. C*	612-033-00-3 *27598-85-2*	Xn	20/21/22	28							
60	5-Amino-3-phenyl-1-bis (dimethylamino)-phosphoryl-1H-1,2,4-triazol *Siehe 1383* triamifos											
61	2-Amino-propan *Vgl. 900* Isopropylamin	612-007-00-1 *75-31-0*	F,Xi	12-36/37/38	16-26-29							
62	gestrichen											
63	Amitrol (ISO) *Vgl. 1582* 1,2,4-Triazol-3-ylamin	613-011-00-6 *61-82-5*	Xn	22-40-48	36-37	I 2.3		IId				
64	Ammoniak wasserfrei	007-001-00-5 *7664-41-7*	T	10-23	7/9-16-38						IB	T
65	Ammoniaklösung, > 35% *Anm. B*	007-001-01-2 *1336-21-6*	C	34-36/37/38	7-26	I 2.2			> 35	10-35		

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 26
Lfd. Nr	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
66	Ammoniaklösung, 10-35% *Anm. B*	007-001-02-X	Xi	36/37/38	2-26							
67	Ammoniumbifluorid *Siehe 70* Ammoniumhydrogendifluorid											
68	Ammoniumdichromat	024-003-00-1 *7789-09-5*	E,Xi	1-8-36/37/38-43	28-35	1 2.2 1 2.3 1 2.4				≥ 0,5		Xi Xi
69	Ammoniumfluorid	009-006-00-8 *12125-01-8*	T	23/24/25	1/2-26-44						je	T
70	Ammoniumhydrogendifluorid *Vgl. 67* Ammoniumbifluorid	009-009-00-4 *1341-49-7*	C	25-34	22-26-37	1 2.2 1 2.3 1 2.4			> 1	0,1-1		C,Xi C,Xi
71	Ammoniumpolysulfide	016-008-00-2 *9080-17-5*	C	31-34	26	1 2.2 1 2.3 1 2.4			> 5	1-5		C,Xi
72	Amylacetat *Siehe 1175* Pentylacetat											
73	Amylalkohol, ausgenommen: tert-Pentanol *Anm. C*	603-006-00-7 *30899-19-5*	Xn	10-20	24/25	1 2.1		IId				
74	Amylchloride *Siehe 1068* Monochlorpentan											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd. Nr.	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
75	Amylformiat *Anm. C*	607-018-00-3 *638-49-3*		10								
76	Amylnitrit *Anm. C*	 *463-04-7*	T	10-23/24/25	1-13-45						ja	T
77	Amylpropionate *Anm. C*	607-131-00-8 *624-54-4*		10	23							
78	Anilin	612-008-00-7 *62-53-3*	T	23/24/25-33	28-36/37-44	I 2.1 I 2.4	Ia				ja	T,Xn
79	Anilin-Salze *Anm. A*	612-009-00-2	T	23/24/25-33	28-36/37-44						ja	T
80	o-Anisidin *Siehe: 985* 2-Methoxy-anilin											
81	p-Anisidin *Siehe: 986* 4-Methoxy-anilin											
82	Antimonpentachlorid	051-002-00-3 *7647-18-9*	C	34-37	26							
83	Antimontrichlorid	051-001-00-8 *10025-91-9*	C	34-37	26	I 2.4						
84	Antimontrifluorid	051-004-00-4 *7783-56-4*	T	23/24/25	7-26-44						ja	T
85	Antimontrioxid *Anm. K*	 *1309-64-4*				II						

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Kennz.-Grenzen in % bzw. Klasse					
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
86	Antimon-Verbindungen,soweit nicht aufgeführt; ausgenommen: Antimontrioxid, Diantimontetraoxid, Diantimonpentoxid, Diantimontrisulfid, Diantimonpentasulfid *Anm. A*	051-003-00-9	Xn	20/22	22	I 2.2		≥ 0,25				
87	Antu (ISO) *Vgl. 1090* 1-(1-Naphthyl)-2-thioharnstoff	006-008-00-0 *86-88-4*	T+	28-40	25-36/37-45	I 2.3 I 2.4	Ia				ja	T+
88	Arsen	033-001-00-X *7440-38-2*	T	23/25	1/2-20/21-28-44	I 2.4						
89	Arsenpentoxid, arsenige Säure, Arsensäure und deren Salze (Arsenite, Arsenate) *Anm. A,K*	033-002-00-5	T	23/25-45	1/2-20/21-28-44	I 2.3 I 2.3 I 2.4 II	>0,2	0,1-0,2			ja ja ja	T,Xn T,Xn T,Xn
90	Arsenverbindungen, soweit nicht aufgeführt *Anm. A*	033-002-00-5	T	23/25	1/2-20/21-28-44	I 2.2 I 2.3 I 2.4	> 0,2	0,1-0,2			ja ja ja	T,Xn T,Xn T,Xn
91	Asbest *Anm. K*	*1332-21-4* *12001-28-4* *12001-29-5* *12172-73-5* *77536-66-4* *77536-67-5* *77536-68-6*				I 2.5 II						
92	Atropin *Vgl. 1464* DL-Tropyl-tropat	614-010-00-3 *51-55-8*	T	26/28	1-25-45	I 2.4	> 0,1	> 0,01-0,1			ja	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
93	Atropin-Salze *Anm. A*	614-011-00-9	T	28/28	1-28-45	I 2.4	> 0,1	> 0,01-0,1			ja	T,Xn
94	Atropin-Verbindungen		T	28/28	1-28-45	I 2.4					ja	T,Xn
95	4-Azaheptan-1,7-diamin *Vgl. 859* Dipropylentriamin	612-083-00-7 *56-18-8*	C	21/22-34-43	26-36/37/39	I 2.2			> 10	1-10		C
96	azamethiphos	*35575-96-3*	Xn	22-36	22-26	I 2.3						
97	3-Azapentan-1,5-diamin *Vgl. 511* Diethylentriamin	612-058-00-X *111-40-0*	C	21/22-34-43	26-36/37/39	I 2.2			> 10	1-10		C
98	azinphos-ethyl *Vgl. 527* O,O-Diethyl-S-(4-oxo-3H-1,2,3-benzotriazin-3-yl)-methyl-dithio-phosphat	015-068-00-1 *2642-71-9*	T	26/27/28	1-13-45	I 2.3 I 2.4	Ia				ja	T,Xn
99	azinphos-methyl *Vgl. 511* O,O-Dimethyl-S-(4-oxo-3H-1,2,3-benzotriazin-3-yl)-methyl-dithio-phosphat	015-039-00-9 *86-50-0*	T	26/27/28-36/38	1-13-45	I 2.3 I 2.4	Ia				ja	T,Xn
100	Aziridin *Siehe: 758* Ethylenimin											
101	Azobenzol	611-001-00-6 *103-33-3*	Xn	20/22	28							

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
102	azocyclotin	*41083-11-8*	T	21-23/25-36/37/38	22-26-37/39-45	I 2.3 I 2.4					ja ja	T,Xn T,Xn
103	azothoat *Vgl. 314* O-4-(4-Chlor-phenylazo)-phenyl-O,O-dimethyl-thiophosphat	015-082-00-3 *5834-96-8*	Xn	20/22	2-13	I 2.3 I 2.4					ja	Xn
104	Azoxybenzol	611-002-00-1 *495-48-7*	Xn	20/22	28							
105	barban *Vgl. 273* (4-Chlor-but-2-inyl)-N-(3-chlor-phenyl)-carbamat	006-020-00-6 *101-27-9*	Xn	20/21/22	2-13	I 2.3 I 2.4		IId			ja	Xn
106	Bariumchlorat	017-003-00-8 *13477-00-4*	O,Xn	9-20/22	13-27	I 2.4					ja	Xn
107	Bariumkarbonat	*513-77-9*				I 2.3		IIc				
108	Bariumperchlorat	017-007-00-X *13465-95-7*	O,Xn	9-20/22	27	I 2.4					ja	Xn
109	Bariumperoxid	056-001-00-1 *1304-29-6*	O,Xn	8-20/22	13-27							
110	Bariumpolysulfide	016-003-00-5 *50864-67-0*	Xi	31-36/37/38	28	I 2.3						Xi
111	Barium-Salze, soweit nicht aufgeführt; ausgenommen: Bariumsulfat *Anm. A*	056-002-00-7	Xn	20/22	28	I 2.2 I 2.4		≥ 1				

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Kennz.-Grenzen in % bzw. Klasse					
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennz. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
112	Bariumsulfid	016-002-00-X *21109-95-5*	Xn	20/22-31	28							
113	benchinox *Vgl. 129* Benzoylhydrazono-1,4-benzochinonoxim	650-006-00-8 *495-73-8*	T	23/24/25	2-13-44						ja	T
114	bendiocarb *Vgl. 572* 2,2-Dimethyl-1,3-benzodioxol-4-yl-N-methyl-carbamat	*22781-23-3*	T	23/24/25	2-13-44	I 2.3 I 2.4					ja	T,Xn
115	bensulid *Vgl. 547* O,O-Diisopropyl-S-(2-phenylsulfonylamino-ethyl)-dithiophosphat	015-083-00-9 *741-58-2*	Xn	20/21/22	2-13	I 2.3 I 2.4		IIc			ja	Xn
116	bentazon *Vgl. 903* 3-Isopropyl-1H-2,1,3-benzothiadiazin-4-on-2,2-dioxid	613-012-00-1 *25057-89-0*	Xn	20/21/22	2-13	I 2.3		IId				
117	Benzalchlorid *Siehe: 480* alpha,alpha-Dichlor-toluol											
118	Benzaldehyd	605-012-00-5 *100-52-7*	Xn	22	24							
119	Benzaldehydcyanhydrin	*532-28-5*	T	26/27/28	2-13-27-45	I 2.4					ja	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Kennz.-Grenzen in % bzw. Klasse					
Lfd. Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
120	Benzidin *Anm. E* *Vgl. 1522* 4,4'-Diaminobiphenyl	612-042-00-2 *92-87-5*	T	45-22	53-44	II					ja	T
121	Salze von Benzidin *Anm. A,E*	*612-070-00-5*	*T*	*45-22*	*53-44*	*II*					*ja*	*T*
122	p-Benzochinon *Vgl. 258* Chinon	606-013-00-3 *106-51-4*	T	23/25-36/37/38	26-28-44						ja	T
123	Benzol *Anm. E*	601-020-00-8 *71-43-2*	F,T	45-11-23/24/25-48	53-16-29-44	I 2.1 II	Ia				ja[1]	T[1]
	[1] ausgenommen Ottokraftstoffe an Tankstellen											
124	1,2,4,5-Benzoltetracarbonsäuredianhydrid *Siehe: 1278* Pyromellitsäuredianhydrid											
125	1,2,4-Benzoltricarbonsäureanhydrid *Siehe: 1443* Trimellitsäureanhydrid											
126	3,3,4,4'-Benzophenontetracarbonsäuredianhydrid *Vgl. 258* 4,4'-Carbonyldiphthalsäureanhydrid	607-100-00-9 *2421-28-5*	Xi	36/37	25	I 2.2				≥ 1		
N 127	Benzo(a)pyren *Anm. K*	*50-32-8*				II						

Lfd. Nr.	Stoffidentität: Bezeichnung	EG-Nummer / CAS-Nummer	Kennzeichnung Stoff: Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennzeichnung Zubereitungen: Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 26
1	2	3	4	5	6	7	8				9	10
128	Benzoylchlorid	607-012-00-0 *98-88-4*	C	34	26							
129	Benzoylhydrazono-1,4-benzochinonoxim *Siehe: 113* benchinox											
130	1-(Benzthiazol-2-yl)-3-methyl-harnstoff *Siehe: 131* benzthiazuron											
131	benzthiazuron *Vgl. 130* 1-(Benzthiazol-2-yl)-3-methyl-harnstoff	006-036-00-3 *1929-88-0*	Xn	20/21/22	2-13	I 2.3		IId				
132	Benzylalkohol	603-057-00-5 *100-51-6*	Xn	20/22	26	I 2.1		IIc				
133	Benzylamin	612-047-00-X *100-46-9*	C	34	26							
134	Benzylbenzoat	607-085-00-9 *120-51-4*	Xn	22	25							
135	Benzylbromid *Siehe: 188* alpha-Bromtoluol											
136	Benzyl-chlorformiat	607-064-00-4 *501-53-1*	C	34-37	26							
137	Benzylchlorid *Siehe: 331* alpha-Chlor-toluol											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
Lfd Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.- Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse				Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 26
							T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
138	Bernsteinsäureanhydrid	607-103-00-5 *108-30-5*	Xi	36/37	26	I 2.2				≥ 1		
139	Beryllium *Anm. K*	004-001-00-7 *7440-41-7*	T	26/27-37-45	26-28-45	II					je	T
140	Berylliumverbindungen *Anm. A,K*	004-002-00-2	T	26/27-37-45	26-28-45	II					je	T
141	BHC (ISO) *Siehe 824* HCH (ISO)											
142	binapacryl *Vgl. 1050* [6-(1-Methyl-propyl)-2,4-dinitro-phenyl]-3,3-dimethyl-acrylat	609-024-00-1 *485-31-4*	Xn	20/21/22	22-37	I 2.3 I 2.4		IIb			je	Xn
143	Bipyridinium-Verbindungen, soweit nicht aufgeführt		T	26/27/28	1-13-45	I 2.3					je	T,Xn
144	Bis(chlormethyl)ether *Anm. E*	603-046-00-5 *542-88-1*	T+	45-10 22-24-26	53-45	II					je	T
145	O,O-Bis(4-chlor-phenyl)-N-acetamido-thio-phosphoramidat *Siehe: 1197* phosazetim											
146	1,1-Bis(4-chlor-phenyl) ethanol *Siehe: 287* chlorfenethol											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
147	Bis-(3,5-dimethyl-morpholino-carbonyl-methyl)1,1'-bipyridylium *Siehe: 1075* morphamquat und seine Salze											
148	Bis(dimethyl-thiocarbamoyl)-disulfid *Siehe: 1372* thiram											
149	1,3-Bis(2,3-epoxypropoxy)benzol *Vgl. 1288* Resorcinoldiglycidylether	603-065-00-9 *101-90-6*	T	23/24/25-40-43	23-24-44	I 2.2	>0,1	0,025-0,1			ja	T,Xn
150	1,4-Bis(2,3-epoxypropoxy)butan *Vgl. 200* 1,4-Butandiol-diglycidylether	603-072-00-7 *2425-79-8*	Xn	20/21-36/38-43	28-28-37/39	I 2.2		≥1			ja	Xn
151	2,2-Bis-[4-(2,3-epoxypropoxy)-phenyl]-propan *Siehe: 1022* 4,4'-Methylen-diphenyl-diglycidylether											
152	S-[1,2-Bis(ethoxycarbonyl)ethyl]-0,0-dimethyl-dithiophosphat *Siehe: 951* malathion mit einem Isomalathiongehalt von mehr als 1,8 %											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Konz.-Grenzen in % bzw. Klasse					
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennzeichen für R-Sätze	Kennzeichen für S-Sätze	Konz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
153	Bis(4,4'-glycidyloxy-phenyl)-propan *Siehe: 1622* 4,4'-Methylen-diphenyl-diglycidylether											
154	Bis (1-hydroxycyclohexyl) -peroxid	617-010-00-1 *2407-94-5*	O,C	11-36	3/7/8-14-27-34-37/39							
155	2,5-Bis-(hydroxymethyl)-tetrahydrofuran	603-082-00-2 *104-80-3*	Xi	36/37/38	36	I 2.1				≥ 10		
156	Bis (methoxy-thiocarbonyl) -disulfid *Siehe: 627* dimexano											
157	Bisphenol-A-Epichlorhydrin (Reaktionsprodukte in Form von Epoxidharzen mit einem durchschnittlichen Molekulargewicht ≤ 700) *Vgl. 696* Epoxidharze, Reaktionsprodukt: Bisphenol-A-Epichlorhydrin mit einem durchschnittlichen Molekulargewicht ≤ 700	603-074-00-8 *25068-38-6*	Xi	36/38-43	26-37/39	I 2.2				≥ 1		
158	Bis-(tri-n-butyl-zinn)-oxid *Siehe: 1329* TBTO											
159	Bis-[tri-(2-methyl-2-phenylpropyl)-zinn]-oxid *Siehe: 786* fenbutatin-oxid											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb.-Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
160	Bittermandelöl, blausäurehaltiges	*8013-76-1*	T	26/27/28	7/9-13-45	I 2.4					ja	T,Xn
161	Blausäure *Siehe: 370* Cyanwasserstoff											
162	Blausäure-Salze, ausgenommen: komplexe Cyanide, z.B. Cyanoferrate(II) und (III) und Quecksilberoxidcyanid *Anm. A.*	006-007-00-5	T	26/27/28-32	1/2-7-28-29-45	I 2.3 I 2.4					ja ja	T T
163	Bleialkyle *Anm. A*	082-002-00-1	T	26/27/28-33	13-26-36/37-45	I 2.2	>0,1	0,05-0,1			ja	T,Xn
164	Bleihexafluorsilikat	009-014-00-1 *25808-74-6*	Xn	20/22-33	13-20/21-24/25							
165	Bleiverbindungen, soweit nicht aufgeführt *Anm. A*	082-001-00-6	Xn	20/22-33	13-20/21	I 2.2		≥1			ja	Xn
166	Borfluorwasserstoffsäure *Siehe: 1349* Tetrafluorborsäure, >25%											
167	Bortribromid	005-003-00-0 *10294-33-4*	T	14-26/28-35	9-26-28-36-45						ja	T
168	Bortrichlorid	005-002-00-5 *10294-34-5*	T	14-26/28-34	9-26-28-36-45						ja	T
169	Bortrifluorid	005-001-00-X *7637-07-2*	T	14-26-35	9-26-28-36-45						ja	T

Lfd. Nr.	Stoffidentität: Bezeichnung	Stoffidentität: EG-Nummer / CAS-Nummer	Kennzeichnung Stoff: Kennb. Gef.-Symbol	Kennzeichnung Stoff: Kennziffer für R-Sätze	Kennzeichnung Stoff: Kennziffer für S-Sätze	Kennz. nach Anhang	Kennzeichnung Zubereitungen: Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
170	Braunstein *Siehe: 956* Mangandioxid											
171	Brechweinstein *Siehe: 917* Kaliumantimonyltartrat											
172	Brom	035-001-00-5 *7726-95-6*	C	26-35	7/9-26							
173	bromadiolon *Vgl. 881* (Hydroxy-4'-cumarinyl-3')-3-phenyl-3-(brom-4-diphenyl-4')-1-propanol-1	*28772-56-7*	T	26/27/28	28-36/37/39-45	I 2.3 I 2.4					ja	T,Xn
174	Brombenzol	602-060-00-9 *108-86-1*	Xi	10-38								
175	O-4-Brom-2,5-dichlorphenyl-O,O-diethylthiophosphat *Siehe: 184* bromophos-ethyl											
176	O-(4-Brom-2,5-dichlorphenyl)-O-methyl-phenylthiophosphat *Siehe: 941* leptophos											
177	Bromessigsäure	607-065-00-X *79-08-3*	T	23/24/25-35	36/37/39						ja	T
178	Brom-ethan *Vgl. 737* Ethylbromid	602-055-00-1 *74-96-4*	Xn	20/21/22	28	I 2.3 I 2.4					ja	Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi			
1	2	3	4	5	6	7	8					9	10
179	Bromethen *Vgl. 1471* Vinylbromid	602-024-00-2 *593-60-2*	F	13	9-16-33								
180	Brommethan *Vgl. 1001* Methylbromid	602-002-00-2 *74-83-9*	T	26	1/2-7/9-24 */25-27-45*	I 2.3 I 2.4	Ie					je je	T,Xn T,Xn
181	bromofenoxim *Vgl. 426* 3,5-Dibrom-4-hydroxy-benzaldehyd-O-(2,4-dinitro-phenyl)-oxim	609-032-00-5 *13181-17-4*	Xn	20/22	2-13	I 2.3 I 2.4		IId				je	Xn
182	Bromoform *Siehe: 1398* Tribrommethan												
183	bromophos	*2104-96-3*				I 2.3		IId					
184	bromophos-ethyl *Vgl. 175* O-4-Brom-2,5-dichlor-phenyl-O,O-diethyl-thiophosphat	015-084-00-5 *4824-78-6*	T	23/24/25	2-13-44	I 2.3 I 2.4	Ib					je	T,Xn
185	bromoxynil *Vgl. 427* 3,5-Dibrom-4-hydroxy-benzonitril	608-006-00-0 *1689-84-5*	T	23/24/25	2-13-44	I 2.3 I 2.4	Ic					je	T,Xn
186	bromoxynil-Salze und -Ester *Anm. A*		Xn	22	22	I 2.3 I 2.4						je	Xn
187	1-Brompropan *Vgl. 1257* Propylbromid	602-019-00-5 *106-94-5*	F,T	11-26/27/28	7/9-29-45	I 2.1	Ic					je	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse				Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 26
							T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
188	alpha-Bromtoluol *Vgl. 135* Benzylbromid	602-057-00-2 *100-39-0*	Xi	36/37/38	39							
189	Bromwasserstoff, wasserfrei	035-002-00-0 *10035-10-6*	C	35-37	7/9-26-44							
190	Bromwasserstoff, >40% *Anm. B*	035-002-01-8 *10035-10-6*	C	34-37	7/9-26							
191	Brucin *Vgl. 567* 2,3-Dimethoxy-strychnin	614-006-00-1 *357-57-3*	T	26/28	1-13-45	I 2.4	>0,1	>0,01-0,1			ja	T,Xn
192	Brucin-Salze *Anm. A*	614-007-00-7	T	26/28	1-13-45	I 2.4	>0,1	>0,01-0,1			ja	T,Xn
193	Brucin-Verbindungen		T	26/28	1-13-45	I 2.4					ja	T,Xn
194	1,3-Butadien *Anm. D,K*	601-013-00-X *106-99-0*	F,T	13-45	9-16-33	II						
195	Butadiendiepoxid *Siehe: 497* 1,2,3,4-Diepoxybutan											
196	Butan *Anm. C*	601-004-00-0 *106-97-8*	F	13	9-16-33							
197	Butanal *Siehe: 234* Butyraldehyd											
198	1,3-Butandioldiacrylat *Anm. D*	607-118-00-7 *19485-03-1*	C	21-34-43	26-36/37/39	I 2.2			>10	1-10		C

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi			
1	2	3	4	5	6	7	8					9	10
199	1,4-Butandioldiacrylat *Anm. D*	607-119-00-2 *1070-70-8*	C	21-34-43	26-36/37/39	I 2.2			> 10	1-10			C
200	1,4-Butandiol-diglycidyl-ether *Siehe: 150* 1-4-Bis(2,3-epoxy-propoxy)butan												
201	Butanol, ausgenommen: tert-Butanol *Anm. C* *Vgl. 215* Butylalkohol	603-004-00-6 *71-36-3* *78-92-2* *78-83-1*	Xn	10-20	16	I 2.1		IId					
202	Butanon *Vgl. 770* Ethylmethylketon	606-002-00-3 *78-93-3*	F	11	9-16-23-33								
203	Buten *Anm. C* *Vgl. 224* Butylen	601-012-00-4 *106-98-9* *107-01-7* *115-11-7*	F	13	9-16-33								
204	2-Butenal *Vgl. 349* Crotonaldehyd	605-009-00-9 *123-73-9*	F,T	11-23-36/37/38	29-33-44							ja	T
205	butocarboxim *Vgl. 1057* 2-Methyl-thio-O-(N-methyl-carbamoyl)-butanon-3-oxim	*34681-10-2*	T	23/24/25	2-13-44	I 2.3 I 2.4						ja	T,Xn
206	butoxycarboxim *Vgl. 1058* 2-Methyl-sulfonyl-O-(N-methyl-carbamoyl)-butanon-3-oxim	*34681-23-7*	T	23/24/25	2-13-44	I 2.3 I 2.4						ja	T,Xn

Lfd. Nr.	Stoffidentität: Bezeichnung	EG-Nummer / CAS-Nummer	Kennzeichnung Stoff: Kennb. Gef.-Symbol	Kennzeichnung Stoff: Kennziffer für R-Sätze	Kennzeichnung Stoff: Kennziffer für S-Sätze	Kennzeichnung Zubereitungen: Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
207	1-Butoxy-2,3-epoxy-propan *Vgl. 227* n-Butylglycidylether	603-038-00-7 *2426-08-06*	Xn	20-43	24/25	I 2.2		≥ 1				
208	2-Butoxy-ethanol *Vgl. 228* Butylglykol	603-014-00-0 *111-76-2*	Xn	20/21/22-37	24/25	I 2.1		IIb			ja	Xn
209	2-Butoxy-ethylacetat *Vgl. 229* Butylglykolacetat	607-038-00-2 *112-07-2*	Xn	20/21	24	I 2.1		IId			ja	Xn
210	3-Butoxy-2-propanol	603-052-00-8 *5131-66-8*	Xi	36/38		I 2.1				≥ 25		
211	1-(2-Butoxypropoxy)-2-propanol	603-050-00-7 *24083-03-2*	Xn	21/22		I 2.1		IId			ja	Xn
212	n-Butylacetat	607-025-00-1 *123-86-4*		10								
213	sec-Butylacetat tert-Butylacetat Isobutylacetat *Anm. C* *Vgl. 884* Isobutylacetat	607-026-00-7 *105-46-4(SEC)* *540-88-5(TER)* *110-19-0(ISO)*	F	11	16-23-29-33							
214	n-Butylacrylat *Anm. D*	607-062-00-3 *141-32-2*	Xi	10-36/37/38-43	9							
215	Butylalkohol *Siehe: 201* Butanol, ausgenommen: tert-Butanol											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
216	tert-Butylalkohol *Siehe: 1045* 2-Methylpropanol-2											
217	n-Butylamin *Siehe: 52* 1-Amino-butan											
218	2-tert-Butylaminoethyl-methacrylat *Anm. D*	607-128-00-1 *3775-90-4*	Xi	36/38-43	26	I 2.2				≥ 10		
219	Butylbutyrat *Anm. C*	607-031-00-4 *109-21-7*		10								
220	O-(4-tert-Butyl-2-chlor-phenyl)-O-methyl-phosphorsäure-N-methylamid *Siehe: 352* crufomat											
221	tert-Butyl-α-cumenyl-peroxid	617-007-00-5 *3457-61-2*	O,Xi	11-36/37/38	3/7/9-14-27-37/39							
222	2-tert-Butyl-4,6-dinitro-phenol *Siehe: 645* dinoterb											
223	(2-sec-Butyl-4,6-dinitro-phenyl)-isopropyl-carbonat *Siehe: 638* dinobuton											

Steffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kenne.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
224	Butylen *Siehe: 203* Buten											
225	N-Butyl-N-ethyl-S-propyl-thiocarbamat *Siehe: 1162* pebulat											
226	Butylformiat *Anm. C*	607-017-00-8 *592-84-7(PRI)* *589-40-2(SEC)* *762-75-4(TER)*	F	11	9-16-33							
227	n-Butylglycidylether *Siehe: 207* 1-Butoxy-2,3-epoxy-propan											
228	Butylglykol *Siehe: 208* 2-Butoxy-ethanol											
229	Butylglykolacetat *Siehe: 209* 2-Butoxy-ethylacetat											
230	n-Butyl-methacrylat *Anm. D*	607-033-00-5 *97-88-1*	Xi	10-36/37/38-43								
231	Butylpropionat *Anm. C*	607-029-00-3 *590-01-2*		10								
232	1-(5-tert-Butyl-1,3,4-thia-diazol-2-yl)-harnstoff *Siehe: 1331* tebuthiuron											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kenn.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
233	S-(tert-Butyl-thio-methyl-diethyl-dithiophosphat) *Siehe: 1334* terbufos											
234	Butyraldehyd *Vgl. 197* Butanal	605-006-00-2 *123-72-8*	F	11	9-29-33							
235	n-Butyronitril	608-005-00-5 *109-74-0*	T	10-23/24/25	44						ja	T
236	Cadmiumchlorid *Anm. E*	048-008-003 *10108-64-2*	T	45-23/25-48	53-44	II					ja	T
237	Cadmiumcyanid	048-004-00-1 *542-83-6*	T	26/27/28-32-33-40	1/2-7-28-29-45						ja	T
238	Cadmiumfluorid	048-006-00-2 *7790-79-6*	T	23/25-33-40	22-44						ja	T
239	Cadmiumformiat	048-003-00-6 *4464-23-7*	T	23/25-33-40	22-44						ja	T
240	Cadmiumhexafluoro-silikat	048-005-00-7 *17010-21-8*	T	23/25-33-40	22-44						ja	T
241	Cadmiumjodid	048-007-00-8 *7790-80-9*	T	23/25-33-40	22-44						ja	T
242	Cadmiumoxid	048-002-00-0 *1306-19-0*	T	23/25-33-40	22-44						ja	T

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd. Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
243	Cadmium-Verbindungen, soweit nicht aufgeführt; ausgenommen: Cadmiumsulfid, Cadmiumselenosulfid und Mischungen von Cadmium- und Zinksulfid sowie Cadmium- und Quecksilbersulfid *Anm. A*	048-001-00-5	Xn	20/21/22	22	I 2.2 I 2.4		≥ 0,1			ja	Xn
244	Calcium	020-001-00-X *7440-70-2*	F	15	8-24/25-43							
245	Calciumcarbid	006-004-00-9 *75-20-7*	F	15	8-43							
246	Calziumchromat *Anm. E*	024-008-00-9 *13765-19-0*	T	45-22	53-44	II					ja	T
247	Calciumhydrid	001-004-00-5 *7789-78-8*	F	15	7/8-24/25-43							
248	Calciumhypochlorit, > 39% Cl aktiv	017-012-00-7 *7778-54-3*	O,C	8-31-34	2-26-43							
249	Calciumphosphid	015-003-00-2 *1305-99-3*	F,T	15/29-28	1/2-22-43-45	I 2.3 I 2.4					ja ja	T,Xn T,Xn
250	Calciumpolysulfide	016-005-00-8 *1344-81-6*	Xi	31-36/37/38	28	I 2.3						Xi
251	Calciumsulfid	016-004-00-0 *20548-54-3*	Xi	31-36/37/38	28							
252	camphechlor *Vgl. 801* Chloriertes 2,2-Dimethyl-3-methylen-norboman	602-044-00-1 *8001-35-2*	T	23/24/25-36/38	2-13-44	I 2.3 I 2.4		fc			ja	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
253	carberyl *Vgl. 1039* N-Methyl-1-naphthyl-carbamat	006-011-00-7 *63-25-2*	Xn	20/22-37	2-13	I 2.3 I 2.4		IIa			ja	Xn
254	carbofuran *Vgl. 536* 2,3-Dihydro-2,2-dimethyl-benzofuran-7-yl-N-methylcarbamat	006-026-00-9 *1563-66-2*	T	28/28	1-13-45	I 2.3 I 2.4	Ia				ja	T,Xn
255	Carbonylchlorid *Vgl. 1198* Phosgen	006-002-00-8 *75-44-5*	T	26	7/9-24/25-45						ja	T
256	4,4'-Carbonyldiphthalsäureanhydrid *Siehe: 126* 3,3,4,4'-Benzophenon-tetracarbonsäuredianhydrid											
257	carbophenothion *Vgl. 320* S-(4-Chlor-phenylthio)-methyl-O,O-diethyl-dithiophosphat	015-044-00-8 *786-19-6*	T	23/24/25	2-13-44	I 2.3 I 2.4	Ib				ja	T,Xn
258	Chinon *Siehe: 122* p-Benzochinon											
259	S,S-Chinoxalin-2,3-diyl-trithiocarbonat *Siehe: 1385* thiochinox											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Konz.-Grenzen in % bzw. Klasse						
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennz. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Konz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
260	Chlor	017-001-00-7 *7782-50-5*	T	23-36/37/38	7/9-44						ja	T
261	Chloracetonitril	608-008-00-1 *107-14-2*	T	23/24/25	44						ja	T
262	Chloracetylchlorid	607-080-00-1 *79-04-9*	C	34-37	9-26							
263	Chloralhydrat *Vgl. 1380* Trichloracetaldehyd-monohydrat	605-014-00-6 *302-17-0*	T	25-36/38	25-44						ja	T
264	S-2-Chlor-allyl-N,N-diethyl-dithiocarbamat *Siehe: 1320* sulfallat											
265	Chloralose (INN-Name) *Vgl. 1405* 1,2-O-(R)-(2,2,2-Trichlor-ethyliden)-glucofuranose	605-013-00-0 *15879-93-3*	Xn	20/22	2-16-24/25-28	I 2.4					ja	Xn
266	Chloramin T *Vgl. 1380* Tosylchloramid-natrium	616-010-00-9 *127-65-1*	Xi	36/37/38	2-7-15	I 2.4						Xi
267	Chloranilin mono(1), di(2) und tri(3) *Anm. C*	612-010-00-8 *27134-26-5(1)* *27134-27-6(2)* *18487-39-3(3)*	T	23/24/25-33	28-36/37-44						ja	T
268	2-Chlorbenzaldehyd	605-011-00-X *89-98-5*	C	34	26							

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
269	Chlorbenzol	602-033-00-1 *108-90-7*	Xn	10-20	24/25	I 2.1		IIa				
270	7-Chlor-bicyclo-[3,2,0]-hepta-2,6-dien-6-yl)-dimethylphosphat *Siehe: 832* heptenophos											
271	2-Chlor-1,3-butadien *Anm. D* *Vgl. 310* Chloropren	602-036-00-8 *31900-55-7*	F,Xn	12-20	9-16-29-33							
272	1-Chlorbutan	602-059-00-3 *109-69-3*	F	11	9-16-29							
273	(4-Chlor-but-2-inyl)-N-(3-chlor-phenyl)-carbamat *Siehe: 105* barban											
274	4-Chlor-6-(1-cyano-1-methyl-ethylamino)-2-ethylamino-1,3,5-triazin *Siehe: 382* cyanazin											
275	Chlordan (ISO) *Vgl. 1142* 1,2,4,5,6,7,8,8-Octachlor-3a,4,7,7a-tetrahydro-4,7-methanoindan	602-047-00-8 *57-74-9*	Xn	21/22-40	36/37	I 2.3 I 2.4	IIb				ja	Xn

Lfd Nr	Stoffidentität: Bezeichnung	EG-Nummer CAS Nummer	Kennzeichnung Stoff: Kennb Gef Symbol	Kennziffer für R-Sätze	Kennziffer für S Sätze	Kennzeichnung Zubereitungen: Kennz nach Anhang	Kennz Grenzen in % bzw Klasse: T bzw Klasse	Xn bzw Klasse	C	Xi	Sachkenntnis nach § 12 Abs 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
276	Chlordecon (ISO) *Vgl. 395* Decachlor-pentacyclo (5.2.1.$0^{2,6}$.$0^{3,9}$.$0^{5,8}$) decan-4-on *143-50-0*	606-019-00-6	T	24/25-40	22-36/37-44	I 2.3 I 2.4	Ic				ja	T,Xn
277	O-2-Chlor-1-(2,4-dichlor-phenyl)-vinyl-O,O-diethyl-phosphat *Siehe: 289* chlorfenvinphos											
278	(2-Chlor-3-diethylamino-1-methyl-3-oxo-prop-1-en-yl)-dimethyl-phosphat *Siehe: 1201* phosphamidon											
279	Chlordimeform (ISO) *Vgl. 333* N-(4-Chlor-o-tolyl)-N',N'-dimethylformamidin *6164-98-3*	650-007-00-3	Xn	21/22-40	22-36/37	I 2.3 I 2.4		IIa			ja	Xn
280	2-Chlor-4-dimethylamino-6-methyl-pyrimidin *Siehe: 348* crimidin											
281	Chlordinitrobenzol *Anm. C* *25567-67-3*	610-003-00-4	T	23/24/25-33	28-37-44						ja	T
282	1-Chlor-2,3-epoxypropan *Anm. E* *Vgl. 684* Epichlorhydrin *106-89-8*	603-026-00-6	T	45-10-23/24/25-24-43	53-9-44	I 2.2 I 2.4 II	>0,1	0,025-0,1			ja ja	T,Xn T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd. Nr.	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 26
1	2	3	4	5	6	7	8				9	10
283	Chlorethan *Vgl. 744* Ethylchlorid	602-009-00-0 *75-00-3*	F	13	9-16-33							
284	2-Chlor-ethanol *Vgl. 752* Ethylenchlorhydrin	603-028-00-7 *107-07-3*	T	26/27/28	7/9-28-45	I 2.1 I 2.4	Ia				je je	T,Xn T,Xn
285	(2-Chlorethyl)-trimethyl-ammonium-Salze *Siehe: 295* chlormequat-Salze											
286	chlorfenac *Vgl. 1415* 2,3,6-Trichlor-phenyl-essigsäure	607-074-00-9 *85-34-7*	Xn	20/21/22	2-13	I 2.3		IIb				
287	chlorfenethol *Vgl. 146* 1,1-Bis(4-chlor-phenyl) ethanol	603-049-00-1 *80-06-8*	Xn	20/21/22	2-13	I 2.3		IIc				
288	chlorfenprop-methyl *Vgl. 1009* Methyl-2-chlor-3-(4-chlor-phenyl)-propionat	607-075-00-4 *14437-17-3*	Xn	20/22	2-13	I 2.3		IId				
289	chlorfenvinphos *Vgl. 277* O-2-Chlor-1-(2,4-dichlor-phenyl)-vinyl-O,O-diethyl-phosphat	015-071-00-3 *470-90-6*	T	26/27/28	1-13-28-45	I 2.3 I 2.4	Ia				je	T,Xn
290	chlorfonium-Salze *Anm. A* *Vgl. 1387* Tributyl-(2,4-dichlor-benzyl)-phosphonium-Salze	015-085-00-X *115-78-6*	T	23/24/25	2-13-44	I 2.3 I 2.4	Ic				je	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
291	N-Chlorformyl-morpholin *Anm. K*	*15159-40-7*				II						
292	O-(5-Chlor-1-isopropyl-1,2,4-triazol-3-yl)-O,O-diethyl-thiophosphat *Siehe: 880* isazophos											
293	4-Chlor-m-kresol *Siehe: 299* 4-Chlor-3-methylphenol											
294	chlormefos *Vgl. 508* O,O-Diethyl-S-chlormethyl-dithiophosphat	*24934-91-6*	T	26/27/28	28-36/37/39-42-45	I 2.3 I 2.4					ja	T,Xn
295	chlormequat-Salze *Anm. A* *Vgl. 285* (2-Chlorethyl)-trimethyl-ammonium-Salze	007-003-00-6 *999-81-5 (Cl)*	Xn	20/21/22	2-13	I 2.3						
296	Chlormethan *Vgl. 1011* Methylchlorid	602-001-00-7 *74-87-3*	F,Xn	13-20	9-16-33							
297	3-(3-Chlor-4-methoxyphenyl)-1,1-dimethyl-harnstoff *Siehe: 1081* metoxuron											
298	O-(3-Chlor-4-methyl-cumarin-7-yl)-O,O-diethyl-thiophosphat *Siehe: 346* coumaphos											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
299	4-Chlor-3-methylphenol *Vgl. 283* 4-Chlor-m-kresol	604-014-00-3 *59-50-7*	Xn	21/22-38	26-28	I 2.2		≥ 5			ja	Xn
300	4-(4-Chlor-2-methyl-phenoxy)-buttersäure *Siehe: 959* MCPB											
301	(4-Chlor-2-methyl-phenoxy) -essigsäure *Siehe: 957* MCPA											
302	2-(4-Chlor-methyl-phenoxy)-propionsäure *Siehe: 962* mecoprop											
303	3-Chlor-2-methylpropen *Vgl. 997* 2-Methyl-allylchlorid	602-032-00-6 *563-47-3*	F,Xn	11-20	9-16-29-33							
304	Chlornitroanilin *Anm. C*	610-006-00-0 *41587-36-4*	T	26/27/28-33	28-36/37-45						ja	T
305	1-Chlor-4-nitro-benzol	610-005-00-5 *100-00-5*	T	23/24/25-33	28-37-44						ja	T
306	O-(4-Chlor-3-nitro-phenyl)-O,O-dimethyl-thiophosphat *Siehe: 1200* phosnichlor											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
307	O-(3-Chlor-4-nitro-phenyl)-O,O-dimethyl-thiophosphat *Siehe: 329* Chlorthion (nicht als ISO-Kurzname anerkannt)											
308	1-Chlor-1-nitropropen	610-007-00-6 *600-25-9*	Xn	20/22		I 2.1		IIa				
309	Chloroform *Siehe: 1408* Trichlormethan											
310	Chloropren *Siehe: 271* 2-Chlor-1,3-butadien											
311	chlorphacinon *Vgl. 319* 2[2-(4-Chlor-phenyl-2-phenyl)-acetyl]-indan-1,3-dion	606-014-00-9 *3691-35-8*	T	26/27/28	1-13-44	I 2.3 I 2.4	Ia				ja	T,Xn
312	Chlorphenol *Anm. C*	604-008-00-0 *25167-80-0*	Xn	20/21/22	2-28							
313	4-Chlor-phenoxy-essigsäure *Siehe: 347* 4-CPA											
314	O-4-(4-Chlor-phenylazo)-phenyl-O,O-dimethyl-thiophosphat *Siehe: 103* azothoat											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse					
							T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
315	(4-Chlor-phenyl)-benzol-sulfonat *Siehe: 791* fenson											
316	4-(2-Chlor-phenylhydrazono)-3-methyl-4H-isoxazol-5-on *Siehe: 675* drazoxolon											
317	3-(4-Chlor-phenyl)-1-methoxy-1-methyl-harnstoff *Siehe: 1073* monolinuron											
318	3-[1-(4-Chlor-phenyl)-3-oxo-butyl]-4-hydroxy-cumarin *Siehe: 353* cumachlor											
319	2[2-(4-Chlor-phenyl-2-phenyl)-acetyl]-inden-1,3-dion *Siehe: 311* chlorphacinon											
320	S-(4-Chlor-phenylthio)-methyl-O,O-diethyl-dithiophosphat *Siehe: 257* carbophenothion											
321	S-(2-Chlor-1-phthalimido-ethyl)O,O-diethyl-dithiophosphat *Siehe: 410* dialifos											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
322	Chlorpikrin *Siehe: 1409* Trichlor-nitro-methan											
323	Chlorpropan *Anm. C*	602-018-00-X *26446-78-4*	F,Xn	11-20/21/22	9-29	I 2.1		IIc			ja	Xn
324	3-Chlorpropen *Anm. D* *Vgl. 31* Allylchlorid	602-029-00-X *107-05-1*	F,T	11-26	16-29-33-45						ja	T
325	chlorpyrifos *Vgl. 531* O,O-Diethyl-O-(3,5,6-trichlorpyrid-2-yl)-thiophosphat	015-084-00-4 *2921-88-2*	T	23/24/25	2-13-44	I 2.3 I 2.4		Ic			ja	T,Xn
326	Chlorschwefelsäure *Vgl. 327* Chlorsulfonsäure	016-017-00-1 *7790-94-5*	C	14-35-37	26							
327	Chlorsulfonsäure *Siehe: 326* Chlorschwefelsäure											
328	chlorthiamid *Vgl. 479* 2,6-Dichlor-thiobenzamid	616-005-00-1 *1918-13-4*	Xn	20/21/22	2-13	I 2.3		IIc				
329	Chlorthion (nicht als ISO-Kurzname anerkannt) *Vgl. 307* O-(3-Chlor-4-nitro-phenyl)-O,O-dimethyl-thiophosphat	015-042-00-5 *500-28-7*	Xn	20/21/22	2-13	I 2.3 I 2.4					ja	Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd. Nr	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
330	chlorthiophos	*60238-56-4*	T	23/24-28	36/37-42-45	I 2.3 I 2.4					ja	T,Xn
331	alpha-Chlor-toluol *Vgl. 137* Benzylchlorid	602-037-00-3 *100-44-7*	Xi	36/37/38	39							
332	Chlortoluol *Anm. C*	602-040-00-X *95-49-8(O)* *108-41-8(M)* *106-43-4(P)*	Xn	20	24/25							
333	N-(4-Chlor-o-tolyl)-N',N'-dimethylformamidin *Siehe: 279* Chlordimeform (ISO)											
334	2-Chlor-1-(2,4,5-trichlorphenyl)-vinyl-dimethylphosphat *Siehe: 1344* tetrachlorvinphos											
335	Chlorwasserstoff, wasserfrei	017-002-00-2 *7647-01-0*	C	35-37	7/9-26-44							
336	Chrom-III-Chromate ("chromic chromate") *Anm. K*	*24613-89-6*				II						
337	Chromoxychlorid *Vgl. 340* Chromylchlorid	024-005-00-2 *7791-14-2*	O,C	8-35	7/8-22-28							
338	Chromsäureanhydrid *Siehe: 339* Chromtrioxid											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Kennz.-Grenzen in % bzw. Klasse					
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
339	Chromtrioxid *Vgl. 338* Chromsäureanhydrid	024-001-00-0 *1333-82-0*	O,C	8-35-43	28	I 2.2 I 2.3 I 2.4			>5	0,5-5		C,Xi C,Xi
340	Chromylchlorid *Siehe: 337* Chromoxychlorid											
341	Cinerin I *Vgl. 605* 2,2-Dimethyl-3-(2-methyl-prop-1-enyl)-cyclopropan-carbonsäure-O-(+)cis [(2-but-2-enyl)-methyl-cyclopent-2-en-1-on]-ester	613-025-00-2 *25402-06-6*	Xn	20/21/22	2-13	I 2.4						
342	Cinerin II *Vgl. 594* 2,2-Dimethyl-3(3-methoxy-2-methyl-3-oxo-prop-1-enyl)-cyclopropan-carbonsäure-O-(+)cis-4[(2-but-2-enyl)-3-methyl-cyclopent-2-en-1-on]-ester	613-026-00-8 *121-20-0*	Xn	20/21/22	2-13	I 2.4						
343	Cobalt (in Form atembarer Stäube von Cobaltmetall, Cobaltoxid und Cobaltsulfid) *Anm. K*					II						
344	Colchicin *Vgl. 4* 7-Acetamido-1,2,3,10-tetramethoxy-5,6,7,9-tetrahydrobenzo[a] heptalen-9-on	614-005-00-6 *64-86-8*	T	26/28	1-13-45	I 2.4	>0,1	>0,01-0,1			ja	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Kennz. Grenzen in % bzw. Klasse					
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
345	Coniin und seine Verbindungen		T	23/24/25	1-13-45	1 2 4					ja	T,Xn
346	coumaphos *Vgl. 298* O-(3-Chlor-4-methyl-cumarin-7-yl)-O,O-diethyl-thiophosphat	015-038-00-3 *56-72-4*	T	26/27/28	1-13-28-45	1 2 3 1 2 4	Ia				ja	T,Xn
347	4-CPA *Vgl. 313* 4-Chlor-phenoxy-essigsäure	607-073-00-3 *122-88-3*	Xn	20/21/22	2-13							
348	crimidin *Vgl. 280* 2-Chlor-4-dimethylamino-6-methyl-pyrimidin	613-004-00-8 *535-89-7*	T	26/27/28	1-13-45	1 2 3 1 2 4	Ia				ja	T,Xn
349	Crotonaldehyd *Siehe: 204* 2-Butenal											
350	Crotonöl	*8001-28-3*	T	27/28	1-13-45	1 2 4					ja	T,Xn
351	crotoxyphos	*7700-17-6*	T	23/24/25	36/37-38-45	1 2 3 1 2 4	Ib				ja	T,Xn
352	crufomat *Vgl. 220* O-(4-tert-Butyl-2-chlor-phenyl)-O-methyl-phosphorsäure-N-*methylamid*	015-074-00-X *299-86-5*	Xn	20/21/22	2-13	1 2 3 1 2 4		IIc			ja	Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
353	cumachlor *Vgl. 318* 3-[1-(4-Chlor-phenyl)-3-oxo-butyl]-4-hydroxy-cumarin	607-057-00-6 *81-82-3*	Xn	20/21/22	2-13-44	I 2.3 I 2.4		IIc			je	Xn
354	cumafuryl *Vgl. 869* 4-Hydroxy-2-[3-oxo-1-(2-furyl)butyl]-cumarin	607-058-00-1 *117-52-2*	T	23/24/25	2-13-44	I 2.3 I 2.4					je	T,Xn
355	Cumarinderivate, soweit nicht aufgeführt		T	23-24-25	1-13-45	I 2.3 I 2.4					je	T,Xn
356	cumatetralyl *Vgl. 874* 4-Hydroxy-3-(1,2,3,4-tetrahydro-1-naphthyl)-cumarin	607-059-00-7 *5836-29-3*	T	26/27/28	1-13-45	I 2.3 I 2.4	Ia				je	T,Xn
357	cumithoat *Vgl. 528* O,O-Diethyl-O-(6-oxo-7,8,9,10-tetrahydro-benzo(c)chromen-3-yl)-thiophosphat	015-086-00-5 *572-48-5*	T	23/24/25	2-13-44	I 2.3 I 2.4	Ib				je	T,Xn
358	Cumol *Siehe: 902* Isopropylbenzol											
359	Cumolhydroperoxid *Siehe: 573* alpha,alpha-Dimethyl-benzylhydroperoxid											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 26
Lfd. Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi			
1	2	3	4	5	6	7	8					9	10
360	Curare *8063-08-7*		T	23/24/25	1-13-44	I 2.4						ja	T,Xn
361	Cyanamid	615-013-00-2 *420-04-2*	T	25-36/38-43	3-22-26-44	I 2.3 I 2.4						ja	T,Xn
362	cyanazin *Vgl. 274* 4-Chlor-6-(1-cyano-1-methyl-ethylamino)-2-ethylamino-1,3,5-triazin	613-013-00-7 *21725-46-2*	T	23/24/25	2-13-44	I 2.3 I 2.4	Ic					ja	T,Xn
363	S-[N-(1-Cyan-1-methyl-ethyl)-carbamoyl]-O,O-diethyl-methyl-thio-phosphat *Siehe: 368* cyanthoat												
364	O-(2-Cyano-benzylidenamino)-O,O-diethyl-thiophosphat *Siehe: 1215* phoxim												
365	O-4-Cyano-phenyl-O,O-dimethyl-thiophosphat *Siehe: 366* cyanophos												
366	cyanophos *Vgl. 365* O-4-Cyano-phenyl-O,O-dimethyl-thiophosphat	015-067-00-0 *2636-26-2*	Xn	20/21/22	2-13	I 2.3 I 2.4		IIb				ja	Xn
367	2-Cyanopropan-2-ol *Vgl. 7* Acetoncyanhydrin	608-004-00-X *75-86-5*	T	26/27/28	7/9-27-45	I 2.4						ja	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
368	cyanthoat *Vgl. 383* S-[N-(1-Cyan-1-methyl-ethyl)-carbamoyl]-O,O-diethyl-methyl-thio-phosphat	015-070-00-8 *3734-95-0*	T	28/27/28	1-13-45	I 2.3 I 2.4	Ia				ja	T,Xn
369	Cyanurylchlorid *Siehe: 1421* 2,4,6-Trichlor-1,3,5-triazin											
370	Cyanwasserstoff *Vgl. 181* Blausäure	006-006-00-X *74-90-8*	F,T	12-26/27/28	7/9-13-16-45	I 2.3 I 2.4					ja ja	T T
371	Cyclobutan-1,3-dion	606-008-00-6 *15506-53-3*	F	11	9-16-33							
372	Cyclohexan	601-017-00-1 *110-82-7*	F	11	9-16-33							
373	1,2-Cyclohexandicarbonsäureanhydrid *Vgl. 847* Hexahydrophthalsäureanhydrid	607-102-00-X *85-42-7*	Xi	36/37/38	23-39	I 2.2				≧ 1		
374	Cyclohexanol	603-009-00-3 *108-93-0*	Xn	20/22-37/38	24/25	I 2.1		IId				
375	Cyclohexanon	606-010-00-7 *108-94-1*	Xn	10-20	25	I 2.1		IIc				
376	cycloheximid	 *66-81-9*				I 2.3	Ia				ja	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
377	Cyclohexylacrylat *Anm. D*	607-116-00-6 *3066-71-5*	Xi	37/38		I 2.2				≥ 10		
378	Cyclohexylamin	612-050-00-6 *108-91-8*	C	10-21/22-34	36/37/39	I 2.2			> 10	2-10		
379	2-Cyclohexyl-4,6-dinitro-phenol *Siehe: 630* dinex											
380	3-Cyclooctyl-1,1-dimethyl-harnstoff *Siehe: 385* cycluron											
381	Cyclopentan	601-030-00-2 *287-92-3*	F	11	9-16-29-33							
382	Cyclopentanon	606-025-00-9 *120-92-3*	Xi	10-36/38	23							
383	1,2,3,4-Cyclopentan-tetracarbonsäuredian-hydrid	607-104-00-0 *6053-68-5*	Xi	36/37	25	I 2.2				≥ 1		
384	Cyclopropan	601-016-00-6 *75-19-4*	F	13	9-16-33							
385	cycluron *Vgl. 380* 3-Cyclooctyl-1,1-dimethyl-harnstoff	006-027-00-4 *2163-69-1*	Xn	20/21/22	2-13	I 2.3						
386	cyhexatin *Vgl. 1435* Tricyclohexyl-zinnhydroxid	050-002-00-0 *13121-70-5*	Xn	20/21/22	2-13	I 2.3 I 2.4		IIb			je	Xn

Lfd. Nr	Stoffidentität: Bezeichnung	Stoffidentität: EG-Nummer / CAS-Nummer	Kennzeichnung Stoff: Kennb. Gef.-Symbol	Kennzeichnung Stoff: Kennziffer für R-Sätze	Kennzeichnung Stoff: Kennziffer für S-Sätze	Kennzeichnung Zubereitungen: Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
387	cypermethrin	*52315-07-8*	Xn	21/22-36/38	22-26-37/39	I 2.3 I 2.4					ja	Xn
388	2,4-D *Vgl. 485* (2,4-Dichlor-phenoxy)-essigsäure -------- [3])vor Brand geschützt aufbewahren	607-039-00-8 *94-75-7*	Xn	20/21/22	2-13	I 2.3		IIa				[3])
389	2,4-D-Salze und -Ester *Anm. A* -------- [3])vor Brand geschützt aufbewahren	607-040-00-3	Xn	20/21/22	2-13	I 2.3						[3])
390	dazomet *Vgl. 814* 3,5-Dimethyl-perhydro-1,3,5-thiadiazin-2-thion	613-008-00-X *533-74-4*	Xn	21/22	2-13	I 2.3		IIb				
391	2,4-DB *Vgl. 464* 4-(2,4-Dichlor-phenoxy)-buttersäure	607-083-00-8 *94-82-6*	Xn	20/21/22	2-13	I 2.3		IIc				
392	2,4-DB-Salze *Anm. A*	607-084-00-3	Xn	20/21/22	2-13	I 2.3						
393	D-D	*8003-19-8*	T	20/21-25-36/37/38	26-37/39-38-45	I 2.3						
394	DDT (Nicht als ISO-Kurzname anerkannt) *Vgl. 1397* 1,1,1-Trichlor-2,2-bis-(4-chlorphenyl)ethan	602-045-00-7 *50-29-3*	T	25-40-48	22-36/37-44						ja	T

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
396	Decachlor-pentacyclo (5.2.1.$0^{2,6}$.$0^{3,9}$.$0^{5,8}$) decan-4-on *Siehe: 276* Chlordecon (ISO)											
396	2,4a,5,5a,8,15,15a,15b, 15c-Decahydro-4,8-methano -14H,16H,-indolo[3,2,1-ij]oxepino[2,3,4-de]pyr-rolo[2,3-h]chinolin-14-on *Siehe: 1317* Strychnin											
397	decarbofuran *Vgl. 1008* 7-(N-Methyl-carbamoyloxy) -2-methyl-2,3-dihydro-benzofuran	006-022-00-7 *1563-67-3*	T	23/24/25	2-13-44	I 2.3 I 2.4					je	T,Xn
398	deltamethrin	*52918-63-5*	T	21-23/25-36/38	26-37/38-39-45	I 2.3 I 2.4					je	T,Xn
399	demeton-O *Vgl. 515* O,O-Diethyl-O-(2-ethyl-thio-ethyl)-thiophosphat	015-028-00-9 *298-03-3*	T	26/27/28-36	1-13-26-28 -45	I 2.3 I 2.4	Ia				je	T,Xn
400	demeton-O-*methyl* *Vgl. 779* O-(2-Ethylthio-ethyl) -O,O-dimethyl-thio-phosphat	015-030-00-X *867-27-6*	T	23/24/25-36	2-13-26-44	I 2.3 I 2.4	Ic				je	T,Xn
401	demeton-S *Vgl. 516* O,O-Diethyl-S-(2-ethyl-thio-ethyl)-thiophosphat	015-029-00-4 *126-75-0*	T	26/27/28-36	1-13-26-28 -45	I 2.3 I 2.4	Ia				je	T,Xn

Lfd. Nr	Stoffidentität: Bezeichnung	Stoffidentität: EG-Nummer / CAS-Nummer	Kennzeichnung Stoff: Kennb. Gef.-Symbol	Kennzeichnung Stoff: Kennziffer für R-Sätze	Kennzeichnung Stoff: Kennziffer für S-Sätze	Kennzeichnung Zubereitungen: Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
402	demeton-S-methyl *Vgl. 780* S-(2-Ethylthio-ethyl)-O,O-dimethyl-thiophosphat	015-031-00-5 *919-86-8*	T	23/24/25-38	2-13-26-44	1 2 3 1 2 4	Ib				ja	T,Xn
403	demeton-S-methylsulfon *Vgl. 777* S-2-(Ethylsulfonyl)-ethyl-O,O-dimethyl-thiophosphat	015-078-00-1 *17040-19-6*	T	23/24/25	2-13-44	1 2 3 1 2 4	Ib				ja	T,Xn
404	desmetryn *Vgl. 901* 2-Isopropylamino-4-methylamino-5-methylthio-1,3,5-triazin	613-007-00-4 *1014-69-3*	Xn	20/21/22	2-13	1 2 3		IId				
405	DFDT *Vgl. 1398* 1,1,1-Trichlor-2,2-bis-(4-fluor-phenyl)-ethan	*475-26-3*	Xn	20/21/22	22-37	1 2 3 1 2 4					ja	Xn
406	Diacetonalkohol *Siehe 867* 4-Hydroxy-4-methyl-pentan-2-on											
407	Diacetonalkohol, technisch	603-017-00-7 *123-42-2*	F,Xi	11-36	7-16-24/25							
408	Diacetonalkoholmethyl-ether *Siehe 990* 4-Methoxy-4-methyl-2-pentanon											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
409	N,N'-Diacetyl-benzidin	612-044-00-3 *613-35-4*	Xn	20/21/22	22-36							
410	dialifos *Vgl. 321* S-(2-Chlor-1-phthalimido-ethyl)O,O-diethyl-dithiophosphat	015-088-00-6 *10311-84-9*	T	26/27/28	1-13-45	I 2.3 I 2.4	Ia				ja	T,Xn
411	Diallat (ISO) *Vgl. 439* S-2,3-Dichlorallyl-diisopropylthio-carbamat	006-019-00-0 *2303-16-4*	Xn	22-40	25-36/37	I 2.3 I 2.4		IIa			ja	Xn
412	*N,N-Diallyl-chlor-acetamid* *Siehe: 28* allidochlor											
413	Diallylphthalat	607-086-00-4 *131-17-9*	Xn	22	24/25	I 2.2		≥ 25				
414	4,4'-Diamino-diphenyl-methan	612-051-00-1 *101-77-9*	Xn	20/21/22								
415	1,2-Diamino-ethan *Vgl. 754* Ethylendiamin	612-006-00-8 *107-15-3*	C	10-21/22-34-43	9-26-36/37/39	I 2.1 I 2.2			> 10 > 10	2-10 2-10		C C
416	2,4-Diamino-toluol-monosulfat (1) 2,5-Diamino-toluol-monosulfat (2) *Anm. C*	612-030-00-7 *6369-59-1(2)*	Xn	20/21/22	28							

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
417	S-(4,6-Diamino-1,3,5-triazin-2-yl)-methyl-O,O-dimethyl-dithio-phosphat *Siehe: 988* menazon											
418	o-Dianisidin *Siehe: 553* 3,3'-Dimethoxy-benzidin											
419	Salze von o-Dianisidin *Siehe: 1533* Salze von 3,3'-Dimethoxybenzidin											
420	3,6-Diazaoctan-1,8-diamin *Vgl. 1428* Triethylentetramin	612-059-00-5 *112-24-3*	C	21-34-43	26-36/37/39	I 2.2			>10	1-10		
421	diazinon *Vgl. 519* O,O-Diethyl-O-(2-isopropyl-4-methyl-pyrimidin-6-yl)-thiophosphat	015-040-00-4 *333-41-5*	Xn	20/21/22	36/37	I 2.3 I 2.4		IIa			ja	T,Xn
422	Diazomethan *Anm. K*	*334-88-3*				II						
423	1,2-Dibrom-3-chlorpropan *Anm. E*	602-021-00-6 *96-12-8*	T	45-46-20/21-25-48	53-44	I 2.3 II	Ic				ja	T,Xn
424	O-(1,2-Dibrom-2,2-dichlor-ethyl)-O,O-dimethyl-phosphat *Siehe: 1080* naled											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
425	1,2-Dibromethan *Anm. E* *Vgl. 1538* Ethylendibromid	602-010-00-6 *106-93-4*	T	45-23/24/25-36/37/38	53-44	I 2.1 I 2.3 II	Ia Ia				ja ja	T,Xn T,Xn
426	3,5-Dibrom-4-hydroxy-benzaldehyd-O-(2,4-dinitro-phenyl)-oxim *Siehe: 181* bromofenoxim											
427	3,5-Dibrom-4-hydroxy-benzonitril *Siehe: 185* bromoxynil											
428	Dibrommethan *Vgl. 1020* Methylenbromid	602-003-00-8 *74-95-3*	Xn	20	24	I 2.1		IIb				
429	Di-n-butylamin *(1)* Di-sec-butylamin *(2)*	612 049-00-0 *111-92-2 (1)* *626-23-3 (2)*	Xn	10-20/21/22								
430	Di-n-butylether	603-054-00-9 *142-96-1*	Xi	10-36/37/38		I 2.1				≥ 10		
431	*Di-tert-Butylperoxid*	617 001-00-2 *110-05-4*	O,Xi	11-37/38	3/7/9-14-27-37/39							
432	dicamba *Vgl. 460* 3,6-Dichlor-2-methoxy-bezoesäure	607 043-00-X *1918-00-9*	Xn	20/21/22	2-13	I 2.3						
433	dicamba-Salze und-Ester *Anm. A*	607 044-00-5	Xn	20/21/22	2-13	I 2.3						

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
Lfd Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz. Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
434	dichlofenthion *Vgl. 468* O-2,4-Dichlor-phenyl-O,O-diethyl-thiophosphat	015-068-00-7 *97-17-6*	Xn	20/21/22	2-13	I 2 3 I 2 4		IIa			ja	Xn
435	dichlofluanid *Vgl. 455* N-(Dichlor-fluor-methylthio)-N',N-dimethyl-N-phenyl-schwefelsäurediamid	818-006-00-7 *1085-98-9*	Xi	36/37/38-43	22-36/37	I 2 3 I 2 4						
436	dichlon *Vgl. 461* 2,3-Dichlor-1,4-naphthochinon	606-018-00-0 *117-80-6*	Xn	20/21/22-38	2-13	I 2 3		IId				
437	Dichloracetylchlorid	607-067-00-0 *79-36-7*	C	35	9-26							
438	Dichloracetylen *Anm. K*	*7572-29-4*				II						
439	S-2,3-Dichlorallyl-diisopropylthiocarbamat *Siehe: 411* Diallat (ISO)											
440	3,3'-Dichlorbenzidin *Anm. E*	612-068-00-4 *91-94-1*	T	45-21-43	53-44	II					ja	T
441	o-Dichlorbenzol *Siehe: 443* 1,2-Dichlorbenzol											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
442	p-Dichlorbenzol *Siehe: 444* 1,4-Dichlorbenzol											
443	1,2-Dichlorbenzol *Vgl. 441* o-Dichlorbenzol	602-034-00-7 *95-50-1*	Xn	20	24/25	I 2.1		IIa				
444	1,4-Dichlorbenzol *Vgl. 442* p-Dichlorbenzol	602-035-00-2 *106-46-7*	Xn	22	2-24/25	I 2.4					ja	Xn
445	1,4-Dichlorbuten-2 *Anm. K*	*764-41-0*				II						
446	2,2'-Dichlor-diethyl-ether	603-029-00-2 *111-44-4*	T	10-26/27/28-40	7/9-27-38-45	I 2.1		Ib			ja	T,Xn
447	gestrichen											
448	Dichloressigsäure	607-066-00-5 *79-43-6*	C	35	26							
449	1,1-Dichlorethan *Vgl. 764* Ethylidenchlorid	602-011-00-1 *75-34-3*	F,Xn	12-20	7-16-29-33	I 2.1		IIb				
N 450	1,2-Dichlorethan *Vgl. 753* Ethylenchlorid	602-012-00-7 *107-06-2*	F,Xn	11-20	7-16-29-33	I 2.1 I 2.3		IIa IIc				
451	1,1-Dichlorethen *Anm. D* *Vgl. 453* Dichlorethylen	602-025-00-8 *75-35-4*	F,Xn	12-20-40	7-16-29	I 2.1		IIb				

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
452	1,2-Dichlorethen *Vgl. 454* Dichlorethylen	602-026-00-3 *540-59-0*	F,Xn	11-20	7-16-29	I 2.1		IIb				
453	Dichlorethylen *Siehe: 451* 1,1-Dichlorethen											
454	Dichlorethylen *Siehe: 452* 1,2-Dichlorethen											
455	N-(Dichlor-fluor-methylthio)-N',N-dimethyl-N-phenyl-schwefelsäurediamid *Siehe: 435* dichlofluanid											
456	N-(Dichlorfluormethyl-thio)phthalimid *Vgl. 1218* Phthalimido-dichlorfluor-thiomethan	616-012-00-X *719-96-0*	Xi	38	28							
457	Dichlorisocyanursäure, Natrium- *(1)* und Kalium-salz *(2)* *Vgl. 482* 1,3-Dichlor-5H-(1,3,5)-triazin-2,4,6-trion, Natrium- und Kaliumsalz	613-030-00-X *2893-78-9 (1)* *2244-21-5 (2)*	O,Xn	8-22-31-36/37	8-26-41	I 2.2		≥ 10				
458	Dichlorisocyanursäure *Vgl. 481* 1,3-Dichlor-5H-(1,3,5)-triazin-2,4,6-trion	613-029-00-4 *2782-57-2*	O,Xn	8-22-31-36/37	8-26-41							

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 26
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi			
1	2	3	4	5	6	7	8					9	10
459	Dichlormethan *Vgl. 1021* Methylenchlorid	602-004-00-3 *75-09-2*	Xn	20 40	24 23-24/25-36/37	12.1		IIId					
460	3,6-Dichlor-2-methoxy-bezoesäure *Siehe: 432* dicamba												
461	2,3-Dichlor-1,4-naphthochinon *Siehe: 436* dichlon												
462	1,1-Dichlor-1-nitro-ethan	610-002-00-9 *594-72-9*	T	23/24/25	28-44							ja	T
463	2,4-Dichlorphenol	604-011-00-7 *120-83-2*	Xn	22-36/38	26-28								
464	4-(2,4-Dichlor-phenoxy)-buttersäure *Siehe: 391* 2,4-DB												
465	(2,4-Dichlor-phenoxy)-essigsäure *Siehe: 388* 2,4-D												
466	2-(2,4-Dichlor-phenoxy)-ethyl-hydrogensulfat *Siehe: 685* disul												
467	2-(2,4-Dichlor-phenoxy)-propionsäure *Siehe: 474* dichlorprop												

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
468	O-2,4-Dichlor-phenyl-O,O-diethyl-thiophosphat *Siehe: 434* dichlofenthion											
469	3-(3,4-Dichlor-phenyl)-1,1-dimethyl-harnstoff *Siehe: 869* diuron											
470	3-(3,4-Dichlor-phenyl)-1-methoxy-1-methyl-harnstoff *Siehe: 943* linuron											
471	alpha-2,4-Dichlor-phenyl-alpha-phenyl-pyrimidin-5-yl-methanol *Siehe: 1384* triarimol											
472	N-(3,4-Dichlor-phenyl)-propionamid *Siehe: 1238* propanil											
473	S-(2,5-Dichlor-phenyl-thio)-methyl-O,O-diethyl-dithiophosphat *Siehe: 1184* phenkapton											
474	dichlorprop *Vgl. 467* 2-(2,4-Dichlor-phenoxy)-propionsäure	607-045-00-0 *120-36-5*	Xn	20/21/22	2-13	1 2.3		IIc				

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
475	dichlorprop-Salze *Anm. A*	607-046-00-8	Xn	20/21/22	2-13	I 2.3						
476	Dichlorpropan *Anm. C*	602-020-00-0 *26638-19-7*	F,Xn	11-20	9-16-29-33	I 2.1		IIb				
477	1,1-Dichlorpropen *(1)* 1,2-Dichlorpropen *(2)* *Anm. C*	602-031-00-0 *563-58-6(1)* *563-54-2(2)*	F,T	11-25	16-29-33-44						je	T
478	1,3-Dichlorpropen *(1)* 2,3-Dichlorpropen *(2)* 3,3-Dichlorpropen *(3)* *Anm. C*	602-030-00-5 *542-75-6(1)* *78-88-6 (2)* *563-57-5(3)*	F,Xn	11-22	9-16-29-33							
479	2,6-Dichlor-thiobenzamid *Siehe: 328* chlorthiamid											
480	alpha,alpha-Dichlor-toluol *Vgl. 117* Benzalchlorid	602-058-00-8 *98-87-3*	Xi	36/37/38	39							
481	1,3-Dichlor-5H-(1,3,5)-triazin-2,4,6-trion *Siehe: 458* Dichlorisocyanursäure											
482	1,3-Dichlor-5H-(1,3,5)-triazin-2,4,6-trion, Natrium- und Kaliumsalz *Siehe: 457* Dichlorisocyanursäure, Natrium- und Kaliumsalz											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Konz.-Grenzen in % bzw. Klasse						
Lfd. Nr.	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Konz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 26
1	2	3	4	5	6	7	8				9	10
483	(2,2-Dichlor-vinyl)-dimethyl-phosphat *Siehe: 485* dichlorvos											
484	O-(2,2-Dichlor-vinyl)-O-methyl-O-[2-ethyl-sulfinyl-ethyl]-phosphat	015-077-00-8 *7078-53-1*	T	23/24/25	2-13-44	I 2.3 I 2.4					ja	T,Xn
485	dichlorvos *Vgl. 483* (2,2-Dichlor-vinyl)-dimethyl-phosphat	015-019-00-X *62-73-7*	T	23/24/25	2-13-44	I 2.3 I 2.4	Ib				ja	T,Xn
486	dicofol *Vgl. 1386* 2,2,2-Trichlor-1,1-bis (4-chlor-phenyl)-ethanol	603-044-00-4 *115-32-2*	Xn	20/21/22	2-13	I 2.3 I 2.4		IIc			ja	Xn
487	dicrotophos *Vgl. 584* O,O-Dimethyl-O-cis-(2-dimethyl-carbamoyl-1-methyl-vinyl)-phosphat	015-073-00-4 *141-66-2*	T	26/27/28	1-13-28-45	I 2.3 I 2.4	Ia				ja	T,Xn
488	dicumarin *Vgl. 1018* 3,3'-Methylen-bis(4-hydroxy-cumarin)	607-060-00-2 *66-76-2*	T	23/24/25	2-13-44	I 2.3 I 2.4					ja	T,Xn
489	8,8'-Dicumenylperoxid *Vgl. 490* Dicumylperoxid	617-008-00-X *80-43-3*	O,Xi	11-36/37/38	3/7/9-14-27-37/39							
490	Dicumylperoxid *Siehe: 489* 8,8'-Dicumenylperoxid											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
491	Dicyan *Siehe: 1150* Oxalsäuredinitril											
492	2,3-Dicyano-9,10-dioxo-1,4-dithia-anthracen *Siehe: 668* dithianon											
493	Dicyclohexylamin	612-066-00-3 *101-83-7*	C	22-34	36/37/39	I 2.2			> 10	2-10		
494	Dicyclohexylammonium-nitrit	007-009-00-9 *3129-91-7*	Xn	20/22	15-41	I 2.2		≧ 10				
495	*Dicyclohexylmethan-4,4'-diisocyanat*	615-009-00-0 *5124-30-1*	T	23-36/37/38-42/43	26-28-36-45	I 2.2	> 2	0,5-2			ja	T,Xn
496	Dieldrin (ISO) *Vgl. 837* (1 R,4S,4aS,5R,6R,7S,8aR)-1,2,3,4,10,10-Hexachlor-6,7-expoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4:5,8-dimethano-naphthalin	602-049-00-9 *60-57-1*	T+	25-27-40-48	22-36/37-45	I 2.3 I 2.4	Ia				ja	T,Xn
497	1,2,3,4-Diepoxybutan *Vgl 195* Butadiendiepoxid	603 060 00-1 *1464 53 5*	T	23/24/25-36/37/38-40-42/43	23-24-44	I 2.2	> 0,1	0,025-0,1			ja	T,Xn
498	Diethanolamin	603-071 00-1 *111 42 2*	Xi	36/38	26	I 2.2				≧ 10		
499	1,1-Diethoxy-ethan *Vgl 2* Acetal	605-015 00-1 *105 57 7*	F,Xi	11 36/38	9-16-33	I 2.1				≧ 10		

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Kennz.-Grenzen in % bzw. Klasse					
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
500	2-(Diethoxyphosphinyl-imino)-4-methyl-1,3-dithiolan *Siehe: 989* mephosfolan											
501	Diethylamin	612-003-00-X *109-89-7*	F,Xi	11-36/37	16-26-29							
502	2-Diethylamino-ethanol	603-048-00-6 *100-37-8*	Xi	36/37/38	26							
503	2-Diethylaminoethyl-methacrylat *Anm. D*	607-127-00-6 *105-16-8*	Xn	20-36/38-43	26	I 2.2		≥ 10				
504	3-Diethylamino-propylamin *Siehe: 508* N,N-Diethyl-1,3-diamino-propan											
505	N,N-Diethylanilin	612-054-00-8 *91-66-7*	T	23/24/25-33	28-37-44	I 2.2	>5	1-5			ja	T,Xn
506	O,O-Diethyl-S-chlormethyl-dithiophosphat *Siehe: 296* chlormefos											
507	O,O-Diethyl-S-(6-chlor-2-oxo-benz(b)1,3-oxalin-3-yl)-methyl-dithio-phosphat *Siehe: 1198* phosalon											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
508	N,N-Diethyl-1,3-diamino-propan *Vgl. 504* 3-Diethylamino-propylamin	612-082-00-1 *104-78-9*	C	10-21/22-34-43	26-36/37/39	12.2			>10	1-10		C
509	O,O-Diethyl-O-(2-diethylamino-6-methyl-pyrimidin-4-yl)-thiophosphat *Siehe: 1226* pirimiphos-ethyl											
510	Diethylenglykoldiacrylat *Anm. D*	607-120-00-8 *4074-88-8*	T	24-36/38-43	28-39-44	12.2	>2	0,2-2			ja	T,Xn
511	Diethylentriamin *Siehe: 97* 3-Azapentan-1,5-diamin											
512	Diethylether *Vgl. 716* Ether	603-022-00-4 *60-29-7*	F	12-19	9-16-29-33							
513	O,O-Diethyl-S-2-ethylsulfinyl-ethyl-dithiophosphat *Siehe: 1154* oxydisulfoton											
514	O,O-Diethyl-S-(2-ethyl-thio-ethyl)-dithio-phosphat *Siehe: 666* disulfoton											
515	O,O-Diethyl-O-(2-ethyl-thio-ethyl)-thiophosphat *Siehe: 399* demeton-O											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
518	O,O-Diethyl-S-(2-ethyl-thio-ethyl)-thiophosphat *Siehe: 401* demeton-S											
517	O,O-Diethyl-S-(ethylthio-methyl)dithiophosphat *Siehe: 1195* phorat											
518	O,O-Diethyl-S-(N-isopropyl-carbamoyl-methyl)-dithiophosphat *Siehe: 1265* prothoat											
519	O,O-Diethyl-O-(2-isopropyl-4-methyl-pyrimidin-6-yl)-thiophosphat *Siehe: 421* diazinon											
520	Diethylketon *Siehe: 1174* Pentan-3-on											
521	O,O-Diethyl-O-[5-methyl-6-carbethoxy-pyrazolo-(1,5a)-pyrimidyl-2]-thiophosphat *Siehe: 1268* pyrazophos											
522	O,O-Diethyl-O-(4-methyl-cumarin-7-yl)-thiophosphat	015-076-00-0 *299-45-6*	T	26/27/28	1-13-28-45	I 2.3 I 2.4					ja	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
523	O,O-Diethyl-S-(3-methyl-2,4-dioxo-5-oxa-3-aza-heptyl)-dithiophosphat *Siehe: 981* mecarbam											
524	O,O-Diethyl-O-(3-methyl-1H-pyrazol-5-yl)phosphat *Siehe: 1269* pyrazoxon											
525	O,O-Diethyl-O-(4-methylsulfinyl-phenyl)-thiophosphat *Siehe: 792* fensulfothion											
526	O,O-Diethyl-O-(4-nitrophenyl)-thiophosphat *Siehe: 1159* parathion											
527	O,O-Diethyl-S-(4-oxo-3H-1,2,3-benzotriazin-3-yl)-methyl-dithiophosphat *Siehe: 98* azinphos-ethyl											
528	O,O-Diethyl-O-(6-oxo-7,8,9,10-tetrahydrobenzo(c)chromen-3-yl)-thiophosphat *Siehe: 357* cumithoat											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi			
1	2	3	4	5	6	7	8					9	10
529	O,O-Diethyl-phthalimido-thiophosphat *Siehe: 667* ditalimfos												
N 530	Diethylsulfat *Anm. E*	016-027-00-6 *64-67-5*	T+	45-46-20/21/22-34	53-26-44-	II						ja	T+
531	O,O-Diethyl-O-(3,5,6-trichlorpyrid-2-yl)-thiophosphat *Siehe: 325* chlorpyrifos												
532	difenacoum	*56073-07-5*	T	23/24/25	36/37-38-45	I 2.3						ja	T,Xn
533	difenamid *Vgl. 583* N,N-Dimethylamino-2,2-diphenyl-acetamid	616-007-00-2 *957-51-7*	Xn	20/21/22	2-13	I 2.3		IId					
534	difenzoquat *Vgl. 585* (1,2-Dimethyl-3,5-diphenyl-1H-pyrazolium)-methylsulfat	*43222-48-6*	Xn	22-36/37	2-13-23-25	I 2.3 I 2.4						ja	Xn
535	Digitoxin *Vgl. 539* 3-beta,14-beta-Dihydroxy-5-beta-carden-20(22)-olid-3-tridigitoxid	614-022-00-9 *71-63-6*	T	23/25-33	1-44	I 2.4	> 0,1	> 0,01-0,1				ja	T,Xn
536	2,3-Dihydro-2,2-dimethyl-benzofuran-7-yl-N-methylcarbamat *Siehe: 254* carbofuran												

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kenngrenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
537	1,3-Dihydroxybenzol *Vgl. 1285* Resorcin	604-010-00-1 *108-46-3*	Xn	22-36/38	26	1.2.2		≥ 10				
538	1,4-Dihydroxy-benzol *Vgl. 859* Hydrochinon	604-005-00-4 *123-31-9*	Xn	20/22	2-24/25-39							
539	3-beta,14-beta-Dihydroxy-5-beta-carden-20(22)-olid-3-tridigitoxid *Siehe: 535* Digitoxin											
540	5-beta,14-beta-Dihydroxy-3-beta-(beta-D-glucopyranosido-4-beta-D-glucopyranosido-beta-D-cymaropyranosido)-19-oxo-card-20(22)-enolid *Siehe: 1316* K-Strophantin											
541	Diisobutylketon *Siehe: 590* 2,6-Dimethyl-heptan-4-on											
542	2,4-Diisocyanat-toluol *(1)* 2,6-Diisocyanat-toluol *(2)* Mischungen von *(1)* und *(2)* *Anm. C*	615-006-00-4 *584-84-9 (1)* *91-08-7 (2)*	T	26-36/37/38-42	26-28-38-45	1.2.2	> 2	0,5-2			*ja*	T,Xn
543	Di-isopropylamin *Siehe: 658* Di-n-propylamin Di-isopropylamin											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Konzn.-Grenzen in % bzw. Klasse					
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
544	N,N'-Diisopropyl-diamido-phosphorsäure-fluorid *Siehe: 1083* mipafox											
545	Di-isopropylether *Siehe: 660* Di-n-propylether Di-isopropylether											
546	Diisopropylketon *Siehe: 613* 2,4-Dimethyl-3-pentanon											
547	O,O-Diisopropyl-S-(2-phenylsulfonylamino-ethyl)-dithiophosphat *Siehe: 115* bensulid											
548	Diketen *Siehe: 1023* 4-Methylen-2-oxetanon											
549	Dilauroylperoxid	617-003-00-3 *105-74-8*	O,Xi	11-36/37/38	3/7/9-14-27-37/39							
550	dimefox *Vgl. 1357* N,N,N',N'-Tetramethyl-diamido-phosphorsäure-fluorid	015-081-00-9 *115-26-4*	T	26/27/28	1-13-28-45	I 2.3 I 2.4	Ia				ja	T,Xn
551	Dimetan (Nicht als ISO-Kurzname anerkannt) *Vgl. 612* (5,5-Dimethyl-3-oxo-cyclohex-1-en-yl)-N,N-dimethyl-carbamat	006-010-00-1 *122-15-6*	T	26/27/28	1-13-45	I 2.3 I 2.4	Ic				ja	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd. Nr.	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
552	*dimethoat* *Vgl. 597* O,O-Dimethyl-S-(N-*methyl-carbamoyl*)-*methyl*-dithiophosphat	015-061-00-4 *60-51-5*	Xn	20/21/22	2-13	I 2.3 I 2.4		IIb			ja	Xn
553	3,3'-Dimethoxybenzidin *Anm. E* *Vgl. 418* *o*-Dianisidin	612-036-00-X *119-90-4*	T	45-22	53-44	I 2.4 II					ja	T,Xn
554	1-(3',4'-Dimethoxy-benzyl)-6,7-dimethoxy-isochinolin *Siehe: 1155* *Papaverin*											
555	1,1-Dimethoxy-ethan *Vgl. 558* Dimethylacetal	605-007-00-8 *534-15-6*	F	11	9-16-33							
556	1,2-Dimethoxy-ethan *Vgl. 589* Dimethylglykol	603-031-00-3 *110-71-4*	Xn	10-19-20	24/25							
557	2,3-Dimethoxy-strychnin *Siehe: 191* Brucin											
558	Dimethylacetal *Siehe: 555* 1,1-Dimethoxy-ethan											
559	N,N-Dimethylacetamid	616-011-00-4 *127-19-5*	Xn	20/21-36	26-28-36	I 2.1		IIb			ja	Xn
560	O,S-Dimethyl-acetamid-thiophosphat *Siehe 1* acephat											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
561	O,S-Dimethyl-amido-thiophosphat *Siehe: 979* methamidophos											
562	Na-4-Dimethylamino-benzoldiazosulfonat *Siehe: 783* fenaminosulf											
563	N,N-Dimethylamino-2,2-diphenyl-acetamid *Siehe: 533* difenamid											
564	2-Dimethylamino-ethanol	603-047-00-0 *108-01-0*	Xi	10-36/37/38	28							
565	2-Dimethylaminoethyl-methacrylat *Anm. D*	607-132-00-3 *2867-47-2*	Xn	21/22-36/38-43	26-28	I 2.2		≥ 10			ja	Xn
566	3-(N',N'-Dimethylamino-methylen)-amino-phenyl-N-methylcarbamat *Siehe: 810* formetanat											
567	(4-Dimethylamino-3-methyl-phenyl)-N-methyl-carbamat *Siehe: 54* aminocarb											
568	3-Dimethylamino-propyl-amin *Siehe: 580* N,N-Dimethyl-1,3-diamino-propan											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 36
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
569	N,N-Dimethyl-anilin	612-016-00-0 *121-69-7*	T	23/24/25-33	28-37-44	I 2.2	>5	1-5			ja	T,Xn
570	3,3'-Dimethyl-benzidin *Anm. E* *Vgl. 1579* o-Tolidin	612-041-00-7 *119-93-7*	T	45-22	53-44	II					ja	T
571	N,N'-Dimethyl-benzidin	612-043-00-8 *8810-74-4*	Xn	20/21/22	22-36							
572	2,2-Dimethyl-1,3-benzodioxol-4-yl-N-methyl-carbamat *Siehe: 114* bendiocarb											
573	alpha,alpha-Dimethylbenzylhydroperoxid *Vgl. 359* Cumolhydroperoxid	617-002-00-8 *80-15-9*	O,C	11-35	3/7/9-14-27-37/39							
574	1,1'-Dimethyl-4,4'-bipyridinium *Siehe: 1158* paraquat und seine Salze											
575	Dimethylcarbamoylchlorid *Anm. E*	006-041-00-0 *79-44-7*	T	45-22-23-36/37/38	53-44	II					ja	T
576	3-(Dimethylcarbamoyloxy)-5-methyl-1H-pyrazol-1-yl-(N,N)-dimethylcarboxamid *Siehe: 828* dimetilan											
577	Dimethylcarbonat	607-013-00-6 *616-38-6*	F,Xn	11-20/21/22	9-29	I 2.1		IIc			ja	Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
578	1,4-Dimethylcyclohexan	601-019-00-2 *589-90-2*	F	11	9-16-33							
579	3,3'-Dimethyl-4,4'-diaminodiphenylmethan *Anm. K*	*838-88-0*				II						
580	N,N-Dimethyl-1,3-diamino-propan *Vgl. 588* 3-Dimethylamino-propyl-amin	612-061-00-6 *109-55-7*	C	10-22-34-43	26-36/37/39	12.2			>10	1-10		
581	Dimethyldichlorsilan	014-003-00-X *75-78-5*	F,Xi	11-36/37/38								
582	O,O-Dimethyl-O-(2-diethylamino-6-methyl-pyrimidin-4-yl)-thio-phosphat *Siehe: 1227* pirimiphos-methyl											
583	5,6-Dimethyl-2-dimethyl-amino-pyrimidin-4-yl-N,N-dimethylcarbamat *Siehe: 1225* pirimicarb											
584	O,O-Dimethyl-O-cis-(2-dimethyl-carbamoyl-1-methyl-vinyl)-phosphat *Siehe: 487* dicrotophos											
585	(1,2-Dimethyl-3,5-diphenyl-1H-pyrazolium)-methylsulfat *Siehe: 534* difenzoquat											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Konz.-Grenzen in % bzw. Klasse					
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Konz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 26
1	2	3	4	5	6	7	8				9	10
586	Dimethylether	603-019-00-8 *115-10-6*	F	13	9-16-33							
587	O,O-Dimethyl-O-(6-ethoxy-2-ethyl-pyrimidin-4-yl-thiophosphat) *Siehe: 782* etrimfos											
588	N,N-Dimethylformamid	616-001-00-X *68-12-2*	Xn	20/21-36	26-28-36	I 2.1		IIb			ja	Xn
589	Dimethylglykol *Siehe: 558* 1,2-Dimethoxy-ethan											
590	2,6-Dimethyl-heptan-4-on *Vgl. 541* Diisobutylketon	606-005-00-X *108-83-8*	Xi	10-37	24	I 2.1				≥ 10		
591	N,N-Dimethylhydrazin *Anm. E*	007-012-00-5 *57-14-7*	F,T	45-11-23/25-34	53-16-33-44	II					ja	T
592	1,2-Dimethylhydrazin *Anm. K*	*540-73-8*				II						
593	O,O-Dimethyl-S-[(N-2-methoxy-ethyl)-carbamoyl-methyl]-dithiophosphat *Siehe: 46* amidithion											
594	2,2-Dimethyl-3[3-methoxy-2-methyl-3-oxo-prop-1-enyl)-cyclopropan-carbonsäure-O-(+)cis-4[(2-but-2-enyl)-3-methyl-cyclopent-2-en-1-on]-ester *Siehe 342* Cinerin II											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi			
1	2	3	4	5	6	7	8					9	10
596	2,2-Dimethyl-3-(3-methoxy-2-methyl-3-oxo-prop-1-enyl)cyclopropan-carbonsäure-O(+)cis-4-[3-methyl-2-2(penta-2,4-dienyl)-cyclopent-2-en-1-on]-ester *Siehe: 1272* Pyrethrin II												
598	O,O-Dimethyl-S-(2-methoxy-1,3,4(4H)-thiadiazol-5-on-4-yl)-methyl-dithiophosphat *Siehe: 983* methidathion												
597	O,O-Dimethyl-S-(N-methyl-carbamoyl)-methyl-dithiophosphat *Siehe: 552* dimethoat												
598	O,O-Dimethyl-O-cis-(2-N-methylcarbamoyl-1-methyl)-vinyl-phosphat *Siehe: 1089* monocrotophos												
599	O,O-Dimethyl-S-(N-methyl-carbamoyl)-methyl-thiophosphat *Siehe: 1148* omethoat												
600	O,O-Dimethyl-S-(3-methyl-2,4-dioxo-3-aza-butyl)-dithiophosphat *Siehe: 811* formothion												

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
601	Chloriertes 2,2-Dimethyl-3-methylen-norbornan *Siehe: 252* camphechlor											
602	O,O-Dimethyl-S-5-(N-methyl-2-methyl-3-thia-valeramid)-thiophosphat *Siehe: 1468* vamidothion											
603	O,O-Dimethyl-O-(3-methyl-4-methylthio-phenyl)-thiophosphat *Siehe: 793* fenthion											
604	O,O-Dimethyl-O-(3-methyl-4-nitro-phenyl)-thiophosphat *Siehe: 788* fenitrothion											
605	2,2-Dimethyl-3-(2-methyl-prop-1-enyl)-cyclopropan-carbonsäure-O-(+)cis [(2-but-2-enyl)-methyl-cyclopent-2-en-1-on]-ester *Siehe: 341* Cinerin I											
606	2,2-Dimethyl-3-(2-methyl-prop-1-enyl)-cyclopropan-carbonsäure-O-(+)cis-4 [3-methyl-2-(penta-2,4-dienyl)-cyclopent-2-en-1-on]-ester *Siehe: 1271* Pyrethrin I											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi			
1	2	3	4	5	6	7	8					9	10
607	(3,5-Dimethyl-4-methylthio-phenyl)-N-methyl-carbamat *Siehe: 970* Mercaptodimethur (nicht als ISO-Kurzname anerkannt)												
608	O,O-Dimethyl-S-(morpholino-carbonyl)-methyl-dithiophosphat *Siehe: 1077* morphothion												
609	O,O-Dimethyl-O-(4-nitrophenyl)-thiophosphat *Siehe: 1160* parathion-methyl												
610	Dimethylnitrosamin *Anm. E* *Vgl. 1565* N-Nitrosodimethylamin	612-077-00-3 *62-75-9*	T+	45-25-26-48	53-45	II						ja	T+
611	O,O-Dimethyl-S-(4-oxo-3H-1,2,3-benzotriazin-3-yl)-methyl-dithiophosphat *Siehe: 99* azinphos-methyl												
612	(5,5-Dimethyl-3-oxo-cyclohex-1-en-yl)-N,N-dimethyl-carbamat *Siehe: 551* Dimetan (Nicht als ISO-Kurzname anerkannt)												

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Kennz.-Grenzen in % bzw. Klasse					
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
613	2,4-Dimethyl-3-pentanon *Vgl. 548* Diisopropylketon	606-028-00-5 *565-80-0*	F	11	16-23							
614	3,5-Dimethyl-perhydro-1,3,5-thiadiazin-2-thion *Siehe: 390* dazomet											
615	N,N-Dimethyl-phenylen-diamin (o,m,p) *Anm. C*	612-031-00-2 *2836-03-5 (O)* *2836-04-6 (M)* *99-98-9 (P)*	T	23/24/25	28-44	-					ja	T
616	O,O-Dimethyl-S-phthal-imido-methyl-dithio-phosphat *Siehe: 1159* phosmet											
617	Dimethylpropan *Vgl. 1116* Neopentan	601-005-00-6 *463-82-1*	F	13	9-16-33							
618	2,2-Dimethylpropandiol-1,3-diacrylat *Anm. D* *Vgl. 1117* Neopentylglykoldi-acrylat	607-112-00-4 *2223-82-7*	T	24-36/38-43	28-39-44	I 2.2	> 5	0,2-5			ja	T,Xn
619	Dimethylsulfamoylchlorid *Anm. K*	*13360-57-1*				II						
620	Dimethylsulfat *Anm. E*	016-023-00-4 *77-78-1*	T+	45-25-26-34	53-26-27-45	II					ja	T+

Lfd. Nr.	Stoffidentität: Bezeichnung	Stoffidentität: EG-Nummer CAS-Nummer	Kennzeichnung Stoff: Kennb. Gef.-Symbol	Kennzeichnung Stoff: Kennziffer für R-Sätze	Kennzeichnung Stoff: Kennziffer für S-Sätze	Kennzeichnung Zubereitungen: Kennz. nach Anhang	Kennzeichnung Zubereitungen: Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
621	N,N-Dimethyl-toluidin *Anm. C*	612-056-00-9 *29256-93-7*	T	23/24/25-33	28-36/37-44	I 2.2	>5	1-5			ja	T,Xn
622	O,O-Dimethyl-O-(3,5,6-trichlor-2-pyridyl)-phosphat *Siehe: 812* fospirat											
623	2,6-Dimethyl-4-tridecyl-morpholin *Siehe: 1424* tridemorph											
624	1,3-Dimethyl-1-(5-trifluor-methyl-1,3,4-thiadiazol-2-yl)-harnstoff *Siehe: 1384* Thiazefluron											
625	N,N-Dimethyl-N-1,2,3-tri-thian-5yl-amin-hydrogen-oxalat *Siehe: 1388* thiocyclam											
626	dimetilan *Vgl. 578* 3-(Dimethylcarbamoyloxy)-5-methyl-1H-pyrazol-1-yl-(N,N)-dimethylcarboxamid	006-040-00-5 *644-64-4*	T	23/24/25	2-13-44	I 2.3 I 2.4	Ib				ja	T,Xn
627	dimexano *Vgl. 158* Bis (methoxy-thiocarbonyl) -disulfid	016-024-00-X *1468-37-7*	Xn	20/21/22	2-13	I 2.3 I 2.4					ja	Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
628	Dinatrium-(3,6-epoxy-cyclohexan-1,2-dicarb-oxylat) *Siehe: 679* endothal-Natrium											
629	Dinatrium-[N,N'-ethylen-bis(dithiocarbamat)] *Siehe: 1079* nabam											
630	dinex *Vgl. 379* 2-Cyclohexyl-4,6-dinitro-phenol	609-028-00-3 *131-89-5*	T	23/24/25	2-13-44	1 2.3 1 2.4					ja	T,Xn
631	dinex-Salze und -Ester *Anm. A*	609-029-00-9	T	23/24/25	2-13-44	1 2.3 1 2.4					ja	T,Xn
632	2,4-Dinitroanilin	612-040-00-1 *97-02-9*	T	26/27/28-33	28-36/37-45						ja	T
633	Dinitrobenzol *Anm. C*	609-004-00-2 *25154-54-5* *(MIX)*	T	26/27/28-33	28-36/37-45						ja	T
634	4,6-Dinitro-o-kresol *Siehe: 670* DNOC											
635	Dinitrophenol *Anm. C*	609-016-00-8 *25550-58-7*	T	23/24/25-33	28-37-44						ja	T
636	Dinitrophenol-Salze *Anm. A*	609-017-00-3	T	23/24/25-33	28-37-44						ja	T

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer CAS-Nummer	Kennz. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi			
1	2	3	4	5	6	7	8					9	10
637	Dinitrotoluol *Anm. C*	609-007-00-9 *25321-14-6*	T	23/24/25-33	28-37-44							ja	T
638	dinobuton *Vgl. 223* (2-sec-Butyl-4,6-dinitro-phenyl)-isopropyl-carbonat	006-028-00-X *973-21-7*	T	23/24/25	2-13-44	I 2.3 I 2.4	Ic					ja	T,Xn
639	dinocap Mischungen aus Isomeren: (2,6-dinitro-4-octyl-phenyl)-crotonat (2,4-dinitro-6-octyl-phenyl)-crotonat	609-023-00-6 *39300-45-3*	Xn	20/22	2-13	I 2.3 I 2.4		IId				ja	Xn
640	dinocton Mischung aus Isomeren: Methyl-(2,6-dinitro-4-octyl-phenyl)-carbonat Methyl-(2,4-dinitro-6-octyl-phenyl)-carbonat	609-027-00-8	Xn	20/21/22	2-13	I 2.3 I 2.4						ja	Xn
641	dinosam *Vgl. 1008* 6-(1-Methyl-butyl)-2,4-dinitro-phenol	609-033-00-0 *4097-36-3*	T	23/24/25	2-13-44	I 2.3 I 2.4						ja	T,Xn
642	dinosam-Salze und -Ester *Anm. A*	609-034-00-6	T	23/24/25	2-13-44	I 2.3 I 2.4						ja	T,Xn
643	dinoseb *Vgl. 1049* 6-(1-Methyl-propyl)-2,4-dinitro-phenol	609-025-00-7 *88-85-7*	T	26/27/28	1-13-44	I 2.3 I 2.4	Ib					ja	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
644	dinoseb-Salze und -Ester *Anm. A*	609-026-00-2	T	23/24/25	2-13-44	I 2.3 I 2.4	Ib				ja	T,Xn
645	dinoterb *Vgl. 222* 2-tert-Butyl-4,6-dinitro-phenol	609-030-00-4 *1420-07-1*	T	23/24/25	2-13-44	I 2.3 I 2.4	Ib				ja	T,Xn
646	dinoterb-Salze und -Ester *Anm. A*	609-031-00-X	T	23/24/25	2-13-44	I 2.3 I 2.4	Ib				ja	T,Xn
647	dioxacarb *Vgl. 652* 2-(1,3-Dioxolan-2-yl)-phenyl-N-methyl-carbamat	006-029-00-5 *6988-21-2*	T	23/24/25	2-13-44	I 2.3 I 2.4	Ic				ja	T,Xn
648	1,4-Dioxan	603-024-00-5 *123-91-1*	F,Xn	11-19-20	9-16-33	I 2.1		IIa			ja	Xn
649	1,4-Dioxan-2,3-diyl-bis (O,O-diethyl-dithio-phosphat) *Siehe 650* dioxathion											
650	dioxathion *Vgl 649* 1,4-Dioxan-2,3-diyl-bis (O,O-diethyl-dithio-phosphat)	015-063-00-X *78-34-2*	T	26/27/28	1-13-28-45	I 2.3 I 2.4	Ia				ja	T,Xn
651	1,3-Dioxolan	605-017-00-2 *646-06-0*	F	11	16							
652	2-(1,3-Dioxolan-2-yl)-phenyl-N-methyl-carbamat *Siehe 647* dioxacarb											

Stoffidentität			Kennzeichnung Stoff			Kennz. nach Anhang	Kennzeichnung Zubereitungen Konz.-Grenzen in % bzw. Klasse				Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennzeichen für R-Sätze	Kennzeichen für S-Sätze		T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
653	Dipenten *Siehe: 567* p-Menthadien-1,8(9)											
654	Diphenylamin	612-026-00-5 *122-39-4*	T	23/24/25-33	28-36/37-44						ja	T
655	Diphenylmethan-4,4'-diisocyanat (1) Diphenylmethen-2,4'-diisocyanat (2) Diphenylmethan-2,2'-diisocyanat (3) Mischungen von (1), (2) und (3) *Anm. C*	615-005-00-9 *101-68-8 (1)* *5873-54-1 (2)* *2536-05-2 (3)*	Xn	20-36/37/38-42	26-28-38-45	12.2		≥ 2				
656	4,4'-Diphenylmethandiisocyanat, Isomeren und Homologen, Mischungen von (1) und (2)	615-005-01-6 *101-68-8 (1)* *9016-87-9 (2)*	Xn	20-36/37/38-42	26-28-38-45	12.2		≥ 2				
657	Diphosphorpentasulfid *Vgl. 1.25* Phosphorpentasulfid	015-104-00-1 *1314-80-3*	F,Xn	11-20/22-29								
658	Di-n-propylamin (1) Di-isopropylamin (2) *Vgl. 543* Di-isopropylamin	612-048-00-5 *142-84-7 (1)* *108-18-9 (2)*	F,Xi	11-36/37/38	9-16							
659	Dipropylentriamin *Siehe: 95* 4-Azaheptan-1,7-diamin											
660	Di-n-propylether (1) Di-isopropylether (2) *Vgl. 545* Di-isopropylether	603-045-00-X *111-43-3 (1)* *108-20-3 (2)*	F	11-19	9-16-33							

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
661	Dipropylketon *Siehe: 831* 4-Heptanon											
662	diquat und seine Salze *Anm. A* *Vgl. 750* 1,1'-Ethylen-2,2'-bipyridinium	613-005-00-3 *2764-72-9*	T	26/27/28	1-13-45	I 2.3 I 2.4					ja	T,Xn
663	Dischwefeldichlorid	016-012-00-4 *10025-67-9*	C	14-34-37	26							
664	Distickstofftetroxid *Siehe: 1313* Stickstoffdioxid Distickstofftetroxid											
665	disul *Vgl. 466* 2-(2,4-Dichlor-phenoxy)-ethyl-hydrogensulfat	016-025-00-5 *149-26-8*	Xn	20/21/22	2-13	I 2.3						
666	disulfoton *Vgl. 514* O,O-Diethyl-S-(2-ethyl-thio-ethyl)-dithio-phosphat	015-060-00-3 *298-04-4*	T	26/27/28	1-13-28-45	I 2.3 I 2.4	Ia				ja	T,Xn
667	ditalimfos *Vgl. 529* O,O-Diethyl-phthalimido-thiophosphat	*5131-24-8*	Xi	43	37	I 2.3 I 2.4						
668	dithianon *Vgl. 492* 2,3-Dicyano-9,10-dioxo-1,4-dithia-anthracen	613-021-00-0 *3347-22-6*	Xn	20/21/22	2-13	I 2.3		IIb				

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Konzn.-Grenzen in % bzw. Klasse						
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Konzn. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 26
1	2	3	4	5	6	7	8				9	10
669	diuron *Vgl. 489* 3-(3,4-Dichlor-phenyl)-1,1-dimethyl-harnstoff	006-015-00-9 *330-54-1*	Xi	36/37/38	2-13	I 2.3						
670	DNOC *Vgl. 634* 4,6-Dinitro-o-kresol	609-020-00-X *534-52-1*	T	26/27/28-33	1-13-28-45	I 2.3 I 2.4	Ia				ja	T,Xn
671	DNOC, Ammoniumsalz	609-022-00-0 *2980-64-5*	T	26/27/28-33	1-13-28-45	I 2.3 I 2.4					ja	T,Xn
672	DNOC, Kalium- (1) und Natriumsalz (2) *Anm. A*	609-021-00-5 *5787-96-2 (1)* *2312-76-7 (2)*	T	23/24/25-33	2-13-44	I 2.3 I 2.4					ja	T,Xn
673	(Dodecylguanidin)-acetat *Siehe: 674* dodin											
674	dodin *Vgl. 673* (Dodecylguanidin)-acetat	607-076-00-X *2439-10-3*	Xn	20/21/22	2-13	I 2.3		IId				
675	drazoxolon *Vgl. 318* 4-(2-Chlor-phenylhydrazono)-3-methyl-4H-isoxazol-5-on	650-008-00-9 *5707-69-7*	T	23/24/25	2-13	I 2.3 I 2.4	Ic				ja	T,Xn
676	Emetin, seine Salze und Verbindungen *Anm. A*	*483-18-1*	T	26/28	1-45	I 2.4					ja	T,Xn
677	endosulfan *Vgl. 840* 6,7,8,9,10,10-Hexachlor-1,5,5a,6,9,9a-hexahydro-6,9-methano-2,3,4-benzo[e]-dioxathiepin-3-oxid	602-052-00-5 *115-29-7*	T	23/24/25-36/38	2-13-44	I 2.3 I 2.4	Ic				ja	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
678	**endothal und seine Salze, soweit nicht aufgeführt** *Anm. A* *Vgl. 687* 3,6-Epoxy-cyclohexan-1,2-dicarbonsäure	*145-73-3*	T	21-23/25-36/37/38	26-37/39-38-45	1 2.3 1 2.4					ja	T,Xn
679	endothal-Natrium *Vgl. 828* Dinatrium-(3,6-epoxy-cyclohexan-1,2-dicarboxylat)	607-055-00-5 *129-67-9*	T	23/24/25	2-13-44	1 2.3 1 2.4	Ib				ja	T,Xn
680	endothion *Vgl. 993* S-(5-Methoxy-4H-pyron-2-yl)-methyl-O,O-dimethyl-thiophosphat	015-049-00-3 *2778-04-3*	T	23/24/25	2-13-44	1 2.3 1 2.4	Ib				ja	T,Xn
681	endrin *Vgl. 838* 1,2,3,4,10,10-Hexachlor-6,7-epoxy-1,4,4a,5,6,7,-8,8a-octahydro-1,4-endo-5,8-endo-dimethano-naphthalin	602-051-00-X *72-20-8*	T	26/27/28	1-13-28-45	1 2.3 1 2.4	Ia				ja	T,Xn
682	Ephedrin *Vgl. 702* L-Erythro-2-methylamino-1-phenyl-propan-1-ol	614-023-00-4 *299-42-3*	Xn	22	22-25							
683	Ephedrin-Salze *Anm. A*	614-024-00-X	Xn	22	22-25							
684	Epichlorhydrin *Siehe: 282* 1-Chlor-2,3-epoxy-propan											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
685	EPN (nicht als ISO-Kurzname anerkannt) *Vgl. 771* O-Ethyl-O-(4-nitro-phenyl)-phenyl-thiophosphonat	015-038-00-2 *2104-64-5*	T	28/27/28	1-13-28-45	I 2.3 I 2.4	Ia				ja	T,Xn
686	Epoxidharze, Reaktionsprodukt: Bisphenol-A-Epichlorhydrin mit einem durchschnittlichen Molekulargewicht ≤ 700 *Siehe: 157* Bisphenol-A-Epichlorhydrin (Reaktionsprodukte in Form von Epoxidharzen mit einem durchschnittlichen Molekulargewicht ≤ 700)											
687	3,6-Epoxy-cyclohexan-1,2-dicarbonsäure *Siehe: 678* endothal und seine Salze, soweit nicht aufgeführt											
688	1-Epoxyethyl-3,4-epoxy-cyclohexan *Vgl. 1473* Vinylcyclohexandiepoxid	603-066-00-4 *4223-10-3*	T	23/24/25-40	23-24-44	I 2.2	> 0,1	0,025-0,1			ja	T,Xn
689	1,2-Epoxy-3-phenoxypropan *Vgl. 1191* Phenylglycidylether	603-067-00-X *122-60-1*	Xn	21-43	24/25	I 2.2		≥ 1			ja	Xn
690	1,2-Epoxypropan *Anm. K* *Vgl. 1281* 1,2-Propylenoxid	603-055-00-4 *75-56-9*	F,T	12-20/21/22-45	9-16-26-29	II						

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 26
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
691	1,3-Epoxypropan *Vgl. 1282* 1,3-Propylenoxid	603-058-00-0 *503-30-0*	F,Xn	11-20/21/22	9-16-26-29							
692	2,3-Epoxy-1-propanol *Vgl. 819* Glycidol	603-063-00-8 *556-52-5*	T	21/22-23-36/37/38-42/43	44	I 2.2	>5	1-5			ja	T,Xn
693	2,3-Epoxypropylacrylat *Anm. D* *Vgl. 820* Glycidylacrylat	607-117-00-1 *106-90-1*	T	23/24/25-34-43	26-36/37/39-44	I 2.2	>2	0,2-2			ja	T,Xn
694	2,3-Epoxypropylmethacrylat *Anm. D* *Vgl. 821* Glycidylmethacrylat	607-123-00-4 *106-91-2*	Xn	20/21/22-36/38-43	26-28	I 2.2		≥ 10			ja	Xn
695	1,2-Epoxy-3-(tolyloxy)-propan *Anm. C* *Vgl. 940* Kresylglycidylether	603-056-00-X *26447-14-3*	Xi	38	26/28	I 2.2				≥ 2		
696	L-6,7-Epoxy-tropyl-tropat *Siehe: 1305* Scopolamin											
697	EPTC *Vgl. 748* S-Ethyl-N,N-dipropyl-thiocarbamat	006-030-00-0 *759-94-4*	Xn	20/21/22	2-13	I 2.3 I 2.4		IId			ja	Xn
698	erbon *Vgl. 1413* [2-(2,4,5-Trichlor-phenoxy)-ethyl]-2,2-dichlor-propionat	607-077-00-5 *136-25-4*	Xn	20/21/22-36/37	2-13	I 2.3		IId				

Lfd. Nr.	Stoffidentität: Bezeichnung	Stoffidentität: EG-Nummer CAS-Nummer	Kennzeichnung Stoff: Kennz. Gef.-Symbol	Kennzeichnung Stoff: Kennziffer für R-Sätze	Kennzeichnung Stoff: Kennziffer für S-Sätze	Kennzeichnung Zubereitungen: Kennz. nach Anhang	Kennzeichnung Zubereitungen: Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
699	Erdöl- und Kohlenteer-destillate, soweit es sich um Gemische von Kohlen-wasserstoffen handelt(aus-genommen: Treibstoffe); unter Berücksichtigung der unterschiedlichen Zusam-mensetzung werden sie nach Anhang I Nr. 2.1 einge-stuft und gekennzeichnet	650-001-00-0										
700	Erdöl- und Kohlenteer-destillate, mit Flammpunkt unter 21 Grad Celsius; *siehe auch Nr.650-001-00-0*	650-001-01-8	F	11	9-16-29-33							
701	Erdöl- und Kohlenteer-destillate, mit Flammpunkt zwischen 21 und 55 Grad Celsius; *siehe auch Nr.650-001-00-0*	650-001-02-5		10								
702	L-Erythro-2-methylamino-1-phenyl-propan-1-ol *Siehe: 682* Ephedrin											
703	Eserin *Vgl. 1218* Physostigmin *Vgl. 1447* 1,3a,8-Trimethyl-5-methylcarbamoyloxy-1,2, 3,3a,8,8a-hexahydro-pirioio[2,3-b]indol	614-020-00-8 *57-47-6*	T	26/28	1-25-45	I 2.4	>0,1	>0,01-0,1			ja	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 26
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
704	Eserin-Salze *Anm. A*	614-021-00-3	T	26/28	1-25-45	I 2-4	>0,1	>0,01-0,1			ja	T,Xn
705	Eserin-Verbindungen *Anm. A*		T	26/28	1-25-45	I 2.4					ja	T,Xn
706	Essigsäure, >90% *Anm. B*	607-002-00-6 *64-19-7*	C	10-35	2-23-26	I 2.2			>25	10-25		
707	Essigsäure, 25-90% *Anm. B*	607-002-01-3 *64-19-7*	C	34	2-23-26							
708	Essigsäureanhydrid *Vgl. 5* Acetanhydrid	607-008-00-9 *108-24-7*	C	10-34	26	I 2.1 I 2.2			>20 >20	8-20 8-20		
709	Ethan	601-002-00-X *74-84-0*	F	12	9-16-33							
710	Ethandiol *Vgl. 822* Glykol	603-027-00-1 *107-21-1*	Xn	22	2	I 2.1		IId				
711	Ethan-1,2-dioldimeth-acrylat *Anm. D* *Vgl. 755* Ethylenglykoldimeth-acrylat	607-114-00-5 *97-90-5*	Xi	36/37		I 2.2				≥10		
712	Ethanol *Vgl. 731* Ethylalkohol	603-002-00-5 *64-17-5*	F	11	7-16							
713	Ethanolamin *Siehe: 56* 2-Amino-ethanol											

Lfd. Nr.	Stoffidentität: Bezeichnung	Stoffidentität: EG-Nummer CAS-Nummer	Kennzeichnung Stoff: Kennz. Gef.-Symbol	Kennzeichnung Stoff: Kennziffer für R-Sätze	Kennzeichnung Stoff: Kennziffer für S-Sätze	Kennzeichnung Zubereitungen: Kennz. nach Anhang	Kennzeichnung Zubereitungen: Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 26
1	2	3	4	5	6	7	8				9	10
714	Ethanthiol *Vgl. 786* Ethylmercaptan	016-022-00-9 *75-08-1*	F,Xn	11-20	16-25							
715	Ethen *Vgl. 749* Ethylen	601-010-00-3 *74-85-1*	F	13	9-16-33							
716	Ether *Siehe: 512* Diethylether											
717	Ethin *Siehe: 10* Acetylen											
718	ethiofencarb *Vgl. 781* 2-(Ethylthio-methyl)-phenyl-N-methyl-carbamat	*29973-13-5*	Xn	20/21/22	37	1 2.3 1 2.4					ja	Xn
719	ethion *Vgl. 1017* Methylen-S,S'-bis(O,O-diethyl-dithiophosphat)	015-047-00-2 *563-12-2*	T	23/24/25	2-13-44	1 2.3 1 2.4	Ic				ja	T,Xn
720	ethoat-methyl *Vgl. 741* S-(N-Ethyl-carbamoyl-methyl)-O,O-dimethyl-dithiophosphat	015-089-00-1 *116-01-8*	Xn	20/21/22	2-13	1 2.3 1 2.4		IIa			ja	Xn
721	ethoprophos	*13194-48-4*				1 2.3 1 2.4	Ia				ja	T,Xn
722	2-Ethoxyanilin *Anm. C* *Vgl. 1183* o-Phenetidin	612-039-00-6 *94-70-2*	T	23/24/25-33	28-36/37-45						ja	T

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Kennz.-Grenzen in % bzw. Klasse					
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
723	4-Ethoxyanilin *Anm. C* *Vgl. 1182* p-Phenetidin	612-039-00-6 *156-43-4*	T	23/24/25-33	28-36/37-45						ja	T
724	S-[alpha-(Ethoxy-carbonyl)-benzyl]-O,O-dimethyl-dithiophosphat *Siehe: 1187* phenthoat											
725	ethoxychin *Vgl. 728* 6-Ethoxy-2,2,4-trimethyl-1,2-dihydro-chinolin	613-014-00-2 *91-53-2*	Xn	20/21/22	2-13	I 2.3						
726	2-Ethoxy-ethanol *Vgl. 781* Ethylglykol	603-012-00-X *110-80-5*	Xi	10-36	24	I 2.1				≥ 25		
727	2-Ethoxy-ethylacetat *Vgl. 782* Ethylglykolacetat	607-037-00-7 *111-15-9*	Xn	10-20/21	24	I 2.1		IId			ja	Xn
728	6-Ethoxy-2,2,4-trimethyl-1,2-dihydro-chinolin *Siehe: 725* ethoxychin											
729	Ethylacetat	607-022-00-5 *141-78-6*	F	11	16-23-29-33							
730	Ethylacrylat *Anm. D*	607-032-00-X *140-88-5*	F,Xi	11-20/22-36/37/38-43	9-16-33	I 2.2				≥ 5		

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
731	Ethylalkohol *Siehe: 712* Ethanol											
732	Ethylamin	612-002-00-4 *75-04-7*	F,Xi	13-36/37	16-26-29							
733	2-Ethylamino-4-isopropylamino-6-methylthio-1,3,5-triazin *Siehe: 45* ametryn											
734	N-Ethylanilin	612-053-00-2 *103-69-5*	T	23/24/25-33	28-37-44						ja	T
735	Ethylbenzol	601-023-00-4 *100-41-4*	F,Xn	11-20	16-24/25-29	I 2.1		IIc				
736	Ethyl-bromacetat	607-069-00-1 *105-36-2*	T	26/27/28	7/9-26-45						ja	T
737	Ethylbromid *Siehe: 178* Brom-ethan											
738	2-Ethylbutanol	603-051-00-2 *97-95-0*	Xn	21/22		I 2.1		IIc			ja	Xn
739	Ethylbutylketon *Siehe: 829* Heptan-3-on											
740	Ethylcarbamat *Anm. K* *Vgl. 1467* Urethan	*51-79-6*	T	23/24/25-45	2-13	I 2.4 II					ja	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
741	S-(N-Ethyl-carbamoyl-methyl)-O,O-dimethyl-dithiophosphat *Siehe: 720* ethoat-methyl											
742	Ethyl-chloracetat	607-070-00-7 *105-39-5*	T	23/24/25	7/9-44						ja	T
743	Ethyl-chlorformiat	607-020-00-4 *541-41-3*	F,T	11-23-36/37/38	9-16-33-44						ja	T
744	Ethylchlorid *Siehe: 283* Chlorethan											
745	1-(2-Ethylcyclohexan-oxy)-2,3-epoxypropan *Vgl. 746* Ethylcyclohexylglycidyl-ether	603-068-00-5	Xi	36/38-43	26-28-37/39	I 2.2				≥ 2		
746	Ethylcyclohexylglycidyl-ether *Siehe: 745* 1-(2-Ethylcyclohexan-oxy)-2,3-epoxypropan											
747	Ethyl-1,1a,3,3a,4,5,5a,5b,6-decachloroctahydro-2-hydroxy-gamma-oxo-1H-1,3,4-metheno-cyclobuta[cd]penta-len-2 *Siehe: 934* kelevan											

Lfd Nr	Stoffidentität: Bezeichnung	EG-Nummer CAS-Nummer	Kennzeichnung Stoff: Kennb. Gef.-Symbol	Kennzeichnung Stoff: Kennzeichen für R-Sätze	Kennzeichnung Stoff: Kennzeichen für S-Sätze	Kenn. nach Anhang	Kennzeichnung Zubereitungen: Kenn.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
748	S-Ethyl-N,N-dipropyl-thiocarbamat *Siehe: 697* EPTC											
749	Ethylen *Siehe: 715* Ethen											
750	1,1'-Ethylen-2,2'-bipyridinium *Siehe: 682* diquat und seine Salze											
751	gestrichen											
752	Ethylenchlorhydrin *Siehe: 284* 2-Chlor-ethanol											
753	Ethylenchlorid *Siehe: 450* 1,2-Dichlorethan											
754	Ethylendiamin *Siehe: 415* 1,2-Diamino-ethan											
755	Ethylenglykoldimeth-acrylat *Siehe: 711* Ethan-1,2-dioldimeth-acrylat											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd Nr	Bezeichnung	EG-Nummer CAS-Nummer	Kennb Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
756	Ethylenimin *Anm. D,K* *Vgl. 100* Aziridin	613-001-00-1 *151-56-4*	F,T	11-26/27/28-45	9-29-36-45	II					ja	T
N 757	Ethylenoxid *Anm. E* *Vgl. 1152* Oxiran	603-023-00-X *75-21-8*	F+,T	45-46-13-23-36/37/38	52-3/7/9-16-33-44	I 2.3 I 2.4 II	Ia				ja ja	T,Xn T,Xn
758	Ethyl-O-ethyl-S-phenyl-dithiophosphonat *Siehe 805* fonofos											
759	Ethyl-O-ethyl-O-2,4,5-trichlor-phenyl-thiophosphonat *Siehe: 1410* trichloronat											
760	Ethylformiat	607-015-00-7 *109-94-4*	F	11	9-16-33							
761	Ethylglykol *Siehe: 726* 2-Ethoxy-ethanol											
762	Ethylglykolacetat *Siehe: 727* 2-Ethoxy-ethylacetat											
763	2-Ethylhexylacrylat *Anm. D*	607-107-00-7 *103-11-7*	Xi	37/38-43		I 2.2				≥ 1		
764	Ethylidenchlorid *Siehe: 449* 1,1-Dichlorethan											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Kennz.-Grenzen in % bzw. Klasse					
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
765	Ethyllaktat	607-129-00-7 *97-64-3*		10	23							
766	Ethylmercaptan *Siehe: 714* Ethanthiol											
767	Ethyl-methacrylat *Anm. D*	607-071-00-2 *97-63-2*	F,Xi	11-36/37/38-43	9-16-29-33							
768	Ethylmethylether	603-020-00-3 *540-67-0*	F	13	9-16-33							
769	3-Ethyl-4-(1-methyl-imidazol-5-yl-methyl)-tetrahydrofuran-2-on *Siehe: 1219* Pilocarpin											
770	Ethylmethylketon *Siehe: 202* Butanon											
771	O-Ethyl-O-(4-nitro-phenyl)-phenyl-thiophosphonat *Siehe: 885* EPN (nicht als ISO-Kurzname anerkannt)											
772	Ethylpropionat	607-028-00-8 *105-37-3*	F	11	16-23-29-33							
773	N-(1-Ethylpropyl)-3,4-dimethyl-2,6-dinitro-phenylamin *Siehe: 1163* pendimethalin											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
774	S-2-Ethylsulfinyl-ethyl-O,O-dimethyl-dithio-phosphat	015-066-00-0 *2703-37-9*	T	26/27/28	1-13-28-45	12.3 12.4					ja	T,Xn
775	S-2-Ethylsulfinyl-ethyl-O,O-dimethyl-thiophosphat *Siehe: 1153* oxydemeton-methyl											
776	S-2-Ethylsulfinyl-isopropyl-O,O-dimethyl-thiophosphat	015-075-00-5 *2635-50-9*	T	23/24/25	2-13-44	12.3 12.4					ja	T,Xn
777	S-2-(Ethylsulfonyl)-ethyl-O,O-dimethyl-thiophosphat *Siehe: 403* demeton-S-methylsulfon											
778	S-(2-Ethylthio-ethyl)-O,O-dimethyl-dithio-phosphat *Siehe: 1369* thiometon											
779	O-(2-Ethylthio-ethyl)-O,O-dimethyl-thio-phosphat *Siehe: 400* demeton-O-methyl											
780	S-(2-Ethylthio-ethyl)-O,O-dimethyl-thiophosphat *Siehe: 402* demeton-S-methyl											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Kennz.-Grenzen in % bzw. Klasse				Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
781	2-(Ethylthio-methyl)-phenyl-N-methyl-carbamat *Siehe: 718* ethiofencarb											
782	etrimfos *Vgl. 587* O,O-Dimethyl-O-(6-ethoxy-2-ethyl-pyrimidin-4-yl-thiophosphat)	*38260-54-7*	Xn	22	22	1 2 3 1 2 4					ja	Xn
783	fenaminosulf *Vgl. 562* Na-4-Dimethylamino-benzoldiazosulfonat	611-003-00-7 *140-56-7*	T	23/24/25	2-13-44	1 2 3 1 2 4	Ib				ja	T,Xn
784	Fenamiphos	*22224-92-6*	T	24-26/28	36/37/39-45	1 2 3 1 2 4					ja	T,Xn
785	fenazaflor *Vgl. 1188* Phenyl-(5,6-dichlor-2-trifluor-methyl-1-benzimidazol)-carboxylat	613-015-00-8 *14255-88-0*	Xn	20/21/22	2-13	1 2 3		IIa				
786	fenbutatin-oxid *Vgl. 159* Bis-[tri-(2-methyl-2-phenylpropyl)-zinn]-oxid	*13356-08-6*	Xi	36/37/38	22-37-39	1 2 3 1 2 4						Xi
787	fenchlorphos *Vgl. 1416* O-(2,4,5-Trichlor-phenyl)-O,O-dimethyl-thiophosphat	015-052-00-X *299-84-3*	Xn	20/21/22	2-13	1 2 3 1 2 4		IId			ja	Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz. Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
788	fenitrothion *Vgl. 604* O,O-Dimethyl-O-(3-*methyl*-4-*nitro*-phenyl)-thiophosphat	015-054-00-0 *122-14-5*	Xn	20/21/22	2-13	I 2.3 I 2.4		IIb			ja	Xn
789	fenoprop *Vgl. 1414* 2-(2,4,5-Trichlor-phenoxy)-propionsäure	607-047-00-1 *93-72-1*	Xn	20/21/22	2-13	I 2.3		IIc				
790	fenoprop-Salze *Anm. A*	607-048-00-7	Xn	20/21/22	2-13	I 2.3						
791	fenson *Vgl. 315* (4-Chlor-phenyl)-benzol-sulfonat	650-003-00-1 *80-38-6*	Xn	20/21/22	2-13	I 2.3						
792	fensulfothion *Vgl. 525* O,O-Diethyl-O-(4-methyl-sulfinyl-phenyl)-thiophosphat	015-090-00-7 *115-90-2*	T	26/27/28	1-13-28-45	I 2.3 I 2.4	Ia				ja	T,Xn
793	fenthion *Vgl. 603* O,O-Dimethyl-O-(3-methyl-4-methylthio-phenyl)-thiophosphat	015-048-00-8 *55-38-9*	T	20/21-25	36/37-45	I 2.3 I 2.4	Ic				ja	T,Xn
794	fentin-acetat *Vgl. 1457* Triphenyl-zinnacetat	050-003-00-8 *900-95-8*	T	23/24/25	2-13-44	I 2.3 I 2.4	Ic				ja	T,Xn
795	fentin-chlorid *Vgl. 1458* Triphenyl-zinnchlorid	 *639-58-7*	T	21-23/25-36/38	26-37-38-45	I 2.3 I 2.4					ja	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd. Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
796	fentin-hydroxid *Vgl. 1458* Triphenyl-zinnhydroxid	050-004-00-1 *76-87-9*	T	23/24/25	2-13-44	I 2.3 I 2.4	Ic				ja	T,Xn
797	fluenetil *Vgl. 800* 2-Fluor-ethyl-4-biphenylacetat	607-078-00-0 *4301-50-2*	T	26/27/28	1-13-28-45	I 2.3 I 2.4	Ia				ja	T,Xn
798	Fluor	009-001-00-0 *7782-41-4*	T	7-26-35	7/9-36-45						ja	T
799	Fluoressigsäuren, ihre Salze und Verbindungen, soweit nicht aufgeführt		T	26/27/28	1/2-13-45	I 2.4					ja	T,Xn
800	2-Fluor-ethyl-4-biphenylacetat *Siehe: 797* fluenetil											
801	Fluorsulfonsäure	016-018-00-7 *7789-21-1*	C	20-35	26							
802	Fluorwasserstoff wasserfrei	009-002-00-6 *7664-39-3*	T,C	26/27/28-35	7/9-26-36/37-45						ja	T
803	Fluorwasserstoffsäure ...% *Anm B* *Vgl. 804* Flußsäure ...%	009-003-00-1 *7664-39-3*	T,C	26/27/28-35	7/9-26-36/37-45	I 2.2 I 2.4	> 0.5		> 0.5	0.1-0.5	ja ja	T,C,Xi T,C,Xi
804	Flußsäure ...% *Siehe: 803* Fluorwasserstoffsäure ...%											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Kennz.-Grenzen in % bzw. Klasse					
Lfd. Nr	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
805	fonofos *Vgl. 758* Ethyl-O-ethyl-S-phenyl-dithiophosphonat	015-091-00-2 *944-22-9*	T	26/27/28	1-13-45	I 2.3 I 2.4	Ia				ja	T,Xn
N 806	Formaldehyd 5 % ≤ c < 25 % *Anm. B*	605-001-01-2 *50-00-0*	Xn	20/21/22-36/37/38-40-43	26-36/37-51	I 2.2 I 2.4				5-30	ja ja	Xn Xn
N 807	Formaldehyd c ≥ 25 % *Anm. B,D*	605-001-00-5 *50-00-0*	T	23/24/25-34-40-43	26-36/37-44-51	I 2.2 I 2.4	>30				ja ja	T T
808	gestrichen											
809	gestrichen											
810	formetanat *Vgl. 568* 3-(N',N'-Dimethylamino-methylen)-amino-phenyl-N-methylcarbamat	006-031-00-6 *22259-30-9*	T	26/27/28	1-13-45	I 2.3 I 2.4					ja	T Xn
811	formothion *Vgl. 600* O,O-Dimethyl-S-(3-methyl-2,4-dioxo-3-aza-butyl)-dithiophosphat	015-057-00-7 *2540-82-1*	Xn	20/21/22	2-13	I 2.3 I 2.4		IIa			ja	Xn
812	fospirat *Vgl. 622* O,O-Dimethyl-O-(3,5,6-trichlor-2-pyridyl)-phosphat	*5598-52-7*	Xn	20/21/22	22-37	I 2.3 I 2.4					ja	Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
813	fuberidazol *Vgl. 816* 2-(2-Furyl)-benz-imidazol-1,3	613-016-00-3 *3878-19-1*	Xn	20/21/22	2-13	I 2.3						
814	Furfural *Siehe: 817* 2-Furyl-methanal											
815	Furfurylalkohol	603-018-00-2 *98-00-0*	Xn	20/21/22		I 2.1		IIa			ja	Xn
816	2-(2-Furyl)-benz-imidazol-1,3 *Siehe: 813* fuberidazol											
817	2-Furyl-methanal *Vgl. 814* Furfural	605-010-00-4 *98-01-1*	T	23/25	24/25-44	I 2.1	Ib				ja	T,Xn
818	Gelsemin, seine Salze und Verbindungen *Anm. A*		T	26/28	1-45	I 2.4					ja	T,Xn
819	Glycidol *Siehe: 692* 2,3-Epoxy-1-propanol											
820	Glycidylacrylat *Siehe: 693* 2,3-Epoxypropylacrylat											
821	Glycidylmethacrylat *Siehe: 694* 2,3-Epoxypropylmeth-acrylat											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw Klasse	Xn bzw Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
822	Glykol *Siehe: 710* Ethandiol											
823	Glyoxal ...% *Anm. B*	605-016-00-7 *107-22-2*	Xi	36/38	26-28	I 2.2				≥ 10		
824	HCH (ISO) *Anm. C* *Vgl. 141* BHC (ISO) *Vgl. 834* 1,2,3,4,5,6-Hexachlorcyclohexan	602-042-00-0 *608-73-1*	T	21-25-40	22-36/37-44	I 2.3 I 2.4					ja	T,Xn
825	Heptachlor (ISO) *Vgl. 827* 1,4,5,6,7,8,8-Heptachlor-3a,4,7,7a-tetrahydro-4,7-methanoinden	602-046-00-2 *76-44-8*	T	24/25-33-40	36/37-44	I 2.3 I 2.4	Ic				ja	T,Xn
826	Heptachlorepoxid *Vgl. 1545* 1,4,5,6,7,8,8-Heptachlor-2,3-epoxy-3a,4,7,7a-tetrahydro-4,7-methanoindan	602-063-00-5 *1024-57-3*	T	25-33-40	36/37-44	I 2.3	Ib				ja	T
827	1,4,5,6,7,8,8-Heptachlor-3a,4,7,7a-tetrahydro-4,7-methanoinden *Siehe: 825* Heptachlor (ISO)											
828	Heptan *Anm. C*	601-008-00-2 *142-82-5*	F	11	9-16-23-29-33							
829	Heptan-3-on *Vgl. 739* Ethylbutylketon	606-003-00-9 *106-35-4*	Xn	10-20-36	24							

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
830	2-Heptanon	606-024-00-3 *110-43-0*	Xn	10-22	23	121		IId				
831	4-Heptanon *Vgl. 661* Dipropylketon	606-027-00-X *123-19-3*		10	23							
832	heptenophos *Vgl. 270* 7-Chlor-bicyclo-[3.2.0]-hepta-2,6-dien-6-yl)-dimethylphosphat	*23560-59-0*	T	21-23/25	37-38-45	123 124					µ	T,Xn
833	Hexachloraceton	*116-16-5*				12?		IId				
834	1,2,3,4,5,6-Hexachlorcyclohexan *Siehe: 824* HCH (ISO)											
835	gamma-1,2,3,4,5,6-Hexachlor-cyclohexan *Siehe 942* lindan											
836	1,2,3,4,10,10-Hexachlor-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4-endo-5,8-endo-dimethano-naphthalin *Siehe 681* endrin											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Kennz.-Grenzen in % bzw. Klasse					
Lfd. Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung[1] nach § 24
1	2	3	4	5	6	7	8				9	10
837	(1R,4S,4aS,5R,6R,7S,8S,8aR)-1,2,3,4,10,10-Hexachlor-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4:5,8-dimethanonaphthalin *Siehe: 496* Dieldrin (ISO)											
838	1,2,3,4,10,10-Hexachlor-1,4,4a,5,8,8a-hexahydro-1,4-endo-5,8-endo-dimethano-naphthalin *Siehe: 886* Isodrin (Nicht als ISO-Kurzname anerkannt)											
839	(1R,4S,4aS,5S,8R,8aR)-1,2,3,4,10,10-Hexachlor-1,4,4a,5,8,8a-hexahydro-1,4:5,8-dimethanonaphthalin *Siehe: 24* Aldrin (ISO)											
840	6,7,8,9,10,10-Hexachlor-1,5,5a,6,9,9a-hexahydro-6,9-methano-2,3,4-benzo[e]-dioxathiepin-3-oxid *Siehe 677* endosulfan											
841	1,4,5,6,7,7-Hexachloro-bicyclo-[2.2.1]-5-hept-5-en-2,3-dicarbonsäure-anhydrid	607-101-00-4 *115-27-5*	Xi	36/37/38	25	1 2 2				≥ 1		
842	Hexachlorophen *Siehe 1019* 2,2'-Methylen-bis-(3,4,6-trichlorphenol)											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
843	Hexafluorokieselsäure, > 25% *Anm. B* *Vgl. 935* Kieselfluorwasserstoffsäure, > 25%	009-011-00-5 *16961-83-4*	C	34	26-27	I 2 2 I 2 4			> 25	10-25		C, Xi C, Xi
844	Hexafluorosilikate, Alkali- (Na (1), K (2), NH4 (3)) *Anm. A*	009-012-00-0 *16924-85-9(1)* *16871-90-2(2)* *16919-19-0(3)*	T	23/24/25	1/2-26-44	I 2 2 I 2 4	> 10	1-10			ja ja	T, Xn T, Xn
845	Hexafluorosilikate, soweit nicht aufgeführt *Anm. A*	009-013-00-6 *17084-08-1*	Xn	22	2-13-24/25	I 2 2 I 2 3 I 2 4		≥ 3			ja ja ja	Xn Xn Xn
846	Hexafluorpropen *Vgl. 1180* Perfluorpropylen	602-061-00-4 *116-15-4*	Xn	20-37	41							
847	Hexahydrophthalsäureanhydrid *Siehe: 373* 1,2-Cyclohexandicarbonsäureanhydrid											
848	1-beta,3-beta,5-beta,11-beta,14-beta,19-Hexahydroxy-[20(22)-cardenolid]-3-L-rhamnosid *Siehe: 1315* g-Strophantin											
849	Hexamethylen-1,6-diisocyanat	615-011-00-1 *822-06-0*	T	23-36/37/38-42/43	26-28-38-45	I 2 2	> 2	0,5-2			ja	T, Xn
850	Hexamethylphosphorsäuretriamid	015-106-00-2 *680-31-9*	T	45-46	53-44	II					ja	T

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
851	1,6-Hexandioldiacrylat *Anm. D*	607-109-00-8 *1304A-33-4*	Xi	36/38-43	39	I 2.2				≥ 1		
852	Hexan, Isomerengemisch mit mehr als 5% n-Hexan *Anm. C*	601-007-01-4	F,Xn	11-20/21-40	9-16-23	I 2.1		IIa			ja	Xn
853	Hexan, Isomerengemisch mit höchstens 5% n-Hexan *Anm. C*	601-007-00-7 *110-54-3*	F	11	9-16-23-29-33							
854	1-Hexanol	603-059-00-6 *111-27-3*	Xn	22	24/25	I 2.1		IId				
855	2-Hexanon *Vgl. 1007* Methylbutylketon	606-030-00-6 *591-78-6*	T	10-23/24-40	21-23-44	I 2.1	Ic				ja	T,Xn
856	Homatropin und seine Verbindungen *Anm. A*	*87-00-3*	T	26/27/28	1-24/25-45	I 2.4					ja	T,Xn
857	Hydrazin *Anm. K*	007-008-00-3 *302-01-2*	T	10-26/27/28-34-45	36/37/39-45	II					ja	T
858	Hydrazinlösung, 5-64% *Anm. B,K*	007-008-01-0	T	24/25-34-45	36/37/39	II						
859	Hydrochinon *Siehe: 538* 1,4-Dihydroxy-benzol											
860	8-Hydroxychinolin-sulfat	613-017-00-9 *134-31-6*	Xn	20/21/22	2-13	I 2.3		IId				
861	(Hydroxy-4'-cumarinyl-3')-3-phenyl-3-(brom-4-diphenyl-4')-1-propanol-1 *Siehe: 173* bromadiolon											

Stoffidentität			Kennzeichnung Stoff			Kennz. nach Anhang	Kennzeichnung Zubereitungen Kennz.-Grenzen in % bzw. Klasse				Sachkundenis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze		T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
862	4-Hydroxy-3,5-dijod-benzonitril *Siehe: 877* ioxynil											
863	2-Hydroxy-ethyl-acrylat *Anm. D*	607-072-00-8 *818-61-1*	T	24-34-43	28-36/39-44	I 2.2	> 2	0,2-2			ja	T,Xn
864	2-Hydroxyethylmeth-acrylat *Anm. D*	607-124-00-X *868-77-9*	Xi	36/38-43	26-28	I 2.2				≥ 1		
865	Hydroxylammoniumchlorid	*5470-11-1*	Xn	20/22-36/38	2-13	I 2.4					ja	Xn
866	Hydroxylammoniumsulfat	*10039-54-0*	Xn	20/22-36/38	2-13	I 2.4					ja	Xn
867	4-Hydroxy-4-methyl-pentan-2-on *Vgl. 406* Diacetonalkohol	603-016-00-1 *123-42-2*	Xi	36	24/25	I 2.1				≥ 10		
868	2-Hydroxymethyltetra-hydrofuran *Siehe: 1351* Tetrahydrofurfurylalkohol											
869	4-Hydroxy-2-[3-oxo-1-(2-furyl)butyl]-cumarin *Siehe: 354* cumafuryl											
870	4-Hydroxy-3-[3-oxo-1-phenyl)-butyl-cumarin *Siehe: 1475* warfarin											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
871	Hydroxypropylacrylate (Gemisch) *Anm. D*	607-108-00-2 *25584-83-2*	T	23/24/25-34-43	26-36/39-44	1 2 2	> 2	0,2-2			µ	T,Xn
872	Hydroxypropylmethacrylat (Gemisch) *Anm. D*	607-125-00-5 *27813-02-1*	Xi	36/38	26-28	1 2 2				≥ 10		
873	5-(alpha-Hydroxy-alpha-2-pyridylbenzyl)-7-(alpha-2-pyridylbenzyliden)-bicyclo[2,2,1]hept-5-en-2,3-dicarbonsäureamid *Siehe: 1138* norbormid											
874	4-Hydroxy-3-(1,2,3,4-tetrahydro-1-naphthyl)-cumarin *Siehe: 356* cumatetralyl											
875	Hyoscyamin *Vgl. 1463* L-Tropyl-tropat	614-012-00-4 *101-31-5*	T	26/28	1-24-45	1 2 4	> 0,1	> 0,01-0,1			µ	T,Xn
876	Hyoscyamin-Salze *Anm. A*	614-013-00-X	T	26/28	1-24-45	1 2 4	> 0,1	> 0,01-0,1			µ	T,Xn
877	ioxynil *Vgl. 862* 4 Hydroxy-3,5-dijod-benzonitril	608-007-00-6 *1689-83-4*	T	23/24/25	2-13-44	1 2 3 1 2 4	lc				µ	T,Xn
878	ioxyniloctanoat	*3861-47-0*				1 2 3		IIa				

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd. Nr	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennzeichen für R-Sätze	Kennzeichen für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
879	ioxynil-Salze und -Ester, soweit nicht aufgeführt *Anm. A*		Xn	20/21/22	2-13-20/21 -36-44	1 2 3 1 2 4					ja	Xn
880	isazophos *Vgl. 282* O-(5-Chlor-1-isopropyl-1,2,4-triazol-3-yl)-O,O-diethyl-thiophosphat	*42509-80-8*	T	21-23/25	37-38-45	1 2 3 1 2 4					ja	T,Xn
881	isobenzan *Vgl. 1141* 1,3,4,5,6,7,8,8-Octachlor-1,3,3a,4,7,7a-hexahydro-4,7-endomethano-isobenzofuran	602-053-00-0 *297-78-9*	T	26/27/28-36/38	1-13-44	1 2 3 1 2 4	Ia				ja	T,Xn
882	gestrichen											
883	Isobuttersäure	607-083-00-9 *79-31-2*	Xn	21/22								
884	Isobutylacetat *Siehe: 213* sec-Butylacetat tert-Butylacetat Isobutylacetat											
885	3-Isocyanatmethyl-3,5,5-trimethylcyclohexyl-isocyanat *Vgl. 892* Isophorondiisocyanat	615-008-00-5 *4098-71-9*	T	23-36/37/38-42/43	26-28-38-45	1 2 2		> 2	0,5-2		ja	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Kennz. Grenzen in % bzw. Klasse					
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
886	Isodrin (Nicht als ISO-Kurzname anerkannt) *Vgl. 638* 1,2,3,4,10,10-Hexachlor-1,4,4a,5,8,8a-hexahydro-1,4-endo-5,8-endo-dimethano-naphthalin	602-050-00-4 *465-73-6*	T	26/27/28	1-13-28-45	1 2 3 1 2 4					ja	T,Xn
887	isofenphos *25311-71-1*		T	21-23/25	36/37-45	1 2 3 1 2 4					ja	T,Xn
888	Isolan (Nicht als ISO-Kurzname anerkannt) *Vgl. 907* (1-Isopropyl-3-methyl-1H-pyrazol-5-yl)-N,N-dimethyl-carbamat	006-009-00-6 *119-38-0*	T	26/27/28	1-13-45	1 2 3 1 2 4	1a				ja	T,Xn
889	Isopentan *Vgl. 1003* Methylbutan	601-006-00-1 *78-78-4*	F	11	9-16-29-33							
890	Isophoron *Siehe: 1445* 3,5,5-Trimethyl-2-cyclohexen-(1)-on											
891	Isophoron diamin *Vgl. 58* 3-Aminomethyl-3,5,5-trimethylcyclohexylamin	612-067-00-9 *2855-13-2*	C	21/22-34-43	26-36/37/39	1 2 2			>10	2-10		C
892	Isophorondiisocyanat *Siehe: 885* 3-Isocyanatmethyl-3,5,5-trimethylcyclohexyl-isocyanat											

Lfd. Nr.	Stoffidentität: Bezeichnung	EG-Nummer CAS-Nummer	Kennzeichnung Stoff: Kennb. Gef.-Symbol	Kennzeichnung Stoff: Kennzeichen für R-Sätze	Kennzeichnung Stoff: Kennzeichen für S-Sätze	Konz. nach Anhang	Kennzeichnung Zubereitungen: Konz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Kennzeichnung Zubereitungen: Konz.-Grenzen in % bzw. Klasse: Xn bzw. Klasse	Kennzeichnung Zubereitungen: Konz.-Grenzen in % bzw. Klasse: C	Kennzeichnung Zubereitungen: Konz.-Grenzen in % bzw. Klasse: Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
893	Isopren *Siehe: 1002* 2-Methyl-1,3-butadien											
894	Isopropenylbenzol *Vgl. 1085* alpha-Methylstyrol	601-027-00-8 *98-83-9*	Xi	10-36/37		12.1				≥ 25		
895	O-2-Isopropoxy-carbonyl-1-methyl-vinyl-O-methyl-ethylamidothiophosphat *Siehe: 1246* propetamphos											
896	2-Isopropoxy-ethanol *Vgl. 905* Isopropylglykol	603-013-00-5 *109-59-1*	Xn	20/21-36	24/25	12.1		IId			ja	Xn
897	2-Isopropoxy-phenyl-N-methyl-carbamat *Siehe: 1253* propoxur											
898	Isopropylacetat *Siehe: 1254* Propylacetat Isopropylacetat											
899	Isopropylalkohol *Siehe: 1240* 2-Propanol											
900	Isopropylamin *Siehe: 61* 2-Amino-propan											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
901	2-Isopropylamino-4-methylamino-5-methylthio-1,3,5-triazin *Siehe: 404* desmetryn											
902	Isopropylbenzol *Vgl. 358* Cumol	601-024-00-X *98-82-8*	Xi	10-37		12.1				≥ 25		
903	3-Isopropyl-1H-2,1,3-benzothiadiazin-4-on-2,2-dioxid *Siehe: 118* bentazon											
904	Isopropylformiat *Siehe: 1263* *Propylformiat* Isopropylformiat											
905	Isopropylglykol *Siehe: 898* 2-Isopropoxy-ethanol											
906	3-Isopropyl-5-methyl-phenyl-N-methyl-carbamat *Siehe: 1232* promecarb											
907	(1-Isopropyl-3-methyl-1H-pyrazol-5-yl)-N,N-dimethyl-carbamat *Siehe: 898* Isolan (Nicht als ISO-Kurzname anerkannt)											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
908	N-Isopropyl-N-phenyl-2-chlor-acetamid *Siehe: 1235* propachlor											
909	Jod	053-001-00-3 *7553-56-2*	Xn	20/21	23-25	1 2 4					ja	Xn
910	Jodessigsäure	607-068-00-6 *64-69-7*	T	26/27/28-35	22-36/37/39-45						ja	T
911	Jodmethan *Siehe: 1033* Methyljodid											
912	3-Jodpropen *Vgl 33* Allyljodid	602-054-00-8 *556-56-9*	C	10-34	7-26							
913	Jodwasserstoff, wasserfrei	053-002-00-9 *10034-85-2*	C	35-37	7/9-26-44							
914	Jodwasserstoff, > 25% *Anm B*	053-002-01-6	C	34	26							
915	Kakodylsäure, Natriumsalz *Vgl. 1106* Natriumkakodylat	*124-65-2*	Xn	22	22	1 2 3 1 2 4					ja	Xn
916	Kalium ..... [2])S5 nicht erforderlich, falls in anderer Weise sicher verpackt	019-001-00-2 *7440-09-7*	F,C	14/15-34	5-8-43 [2])							

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Kennz.-Grenzen in % bzw. Klasse					
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
917	Kaliumantimonyltartrat *Vgl. 171* Brechweinstein	*28300-74-5*	Xn	22	2-13	I 2.4					ja	Xn
918	Kaliumbromat	035-003-00-6 *7758-01-2*	O	9	24/25-27							
919	Kaliumchlorat	017-004-00-3 *3811-04-9*	O,Xn	9-20/22	2-13-16-27	I 2.3 I 2.4					ja ja	Xn Xn
920	Kaliumchromat	024-006-00-8 *7789-00-6*	Xi	36/37/38-43	22-28	I 2.2				≥ 0,5		
921	Kaliumdichromat	024-002-00-6 *7778-50-9*	Xi	36/37/38-43	22-28	I 2.2 I 2.3 I 2.4				≥ 0,5		Xi Xi Xi
922	Kaliumfluorid	009-005-00-2 *7789-23-3*	T	23/24/25	1/2-26-44						ja	T
923	Kaliumhydrogendifluorid	009-008-00-9 *7789-29-9*	C	25-34	22-26-37	I 2.2 I 2.3 I 2.4			> 1	0,1-1		C,Xi C,Xi C,Xi
924	Kaliumhydroxid *Vgl. 19* Ätzkali --- [4])ausgenommen Zubereitungen zur Verwendung als Reinigungsmittel in kindergesicherter Verpackung	019-002-00-8 *1310-58-3*	C	35	2-26-37/39	I 2.2 I 2.4			> 5	1-5		C,Xi C,Xi [4])
925	Kaliumhydroxidlösung, 1-5% *Anm. B*	019-002-02-2	Xi	36/38	2-26							

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
926	Kaliumhydroxidlösung, > 5% *Anm. B*	019-002-01-5	C	35	2-26-27-37 /39							
927	Kaliumnitrit	007-011-00-X *7758-09-0*	O,T	8-25	44	I 2.2	> 5	1-5			ja	T,Xn
928	Kaliumperchlorat	017-006-00-5 *7778-74-7*	O,Xn	9-22	2-13-22-27							
929	Kaliumpermanganat	025-002-00-9 *7722-64-7*	O,Xn	8-22	2							
930	Kaliumpolysulfide	016-007-00-7 *37199-66-9*	C	31-34	26	I 2.3						C,Xi
931	Kaliumsulfid	016-006-00-1 *1312-73-8*	C	31-34	26							
932	Kalomel *Siehe: 1281* Quecksilber(I)-chlorid											
933	Kantharidin und seine Verbindungen *Anm. A*		T	26/27/28	1-13	I 2.4					ja	T,Xn
934	kelevan *Vgl. 747* Ethyl-1,1a,3,3a,4,5,5a,5b, 6-decachloroctahydro-2-hydroxy-gamma-oxo-1H-1,3,4-metheno-cyclobuta[cd]penta-len-2	607-079-00-6 *4234-79-1*	Xn	20/21/22	2-13	I 2.3 I 2.4		IIa			ja	Xn
935	Kieselfluorwasserstoff-säure, > 25% *Siehe 843* Hexafluorokieselsäure, > 25%											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz. Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi			
1	2	3	4	5	6	7	8					9	10
936	Kohlendisulfid *Vgl. 1300* Schwefelkohlenstoff	006-003-00-3 *75-15-0*	F,T	12-26	27-29-33-43-45	I 2.1 I 2.3	Ia Ia					ja ja	T,Xn T,Xn
937	Kohlenmonoxid	006-001-00-2 *630-08-0*	F,T	12-23	7-16							ja	T
938	Kresol *Anm. C*	604-004-00-9 *1319-77-3* *(MIX)*	T	24/25-34	2-28-44	I 2.1	Ib					ja	T,Xn
939	Kresolsulfonsäure		Xn	20/21/22	1-13	I 2.4						ja	Xn
940	Kresylglycidylether *Siehe 695* 1,2-Epoxy-3-(tolyloxy)-propan												
941	leptophos *Vgl. 176* O-(4-Brom-2,5-dichlor-phenyl)-O-methyl-phenyl-thiophosphat	015-093-00-3 *21609-90-5*	T	23/24/25-39	2-13-44	I 2.3 I 2.4						ja	T,Xn
942	lindan *Vgl. 835* gamma-1,2,3,4,5,6-Hexa-chlor-cyclohexan	602-043-00-5 *58-89-9*	T	23/24/25	2-13-44	I 2.3 I 2.4	Ic					ja	T,Xn
943	linuron *Vgl. 470* 3-(3,4-Dichlor phenyl)-1-methoxy-1-methyl-harnstoff	006-021-00-1 *330-55-2*	Xi	38	2-13	I 2.3							
944	Lithium	003-001-00-4 *7439-93-2*	F,C	14/15-34	8-43								

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi			
1	2	3	4	5	6	7	8					9	10
945	Lithium-Aluminiumhydrid	001-002-00-4 *16853-85-3*	F	15	7/8-24/25-43								
946	Luft, flüssige	008-002-00-3	O	8-34	21								
947	Magnesiumalkyle; C1 bis C5 Kettenlänge *Anm. A*	012-003-00-4	F,C	14-17-34	16-43								
948	Magnesiumphosphid	015-005-00-3 *12057-74-8*	F,T	15/29-28	1/2-22-43-45	I 2.3 I 2.4						ja ja	T,Xn T,Xn
949	Magnesiumpulver (nicht stabilisiert)	012-001-00-3 *7439-95-4*	F	15-17	7/8-43								
950	Magnesiumpulver (phlegmatisiert) oder -späne	012-002-00-9	F	11-15	7/8-43								
951	malathion mit einem Isomalathiongehalt von mehr als 1,8 % *Vgl. 152* S-[1,2-Bis(ethoxycarbonyl)ethyl]-0,0-dimethyl-dithiophosphat	015-041-00-X *121-75-5*	Xn	20/21/22	2-13	I 2.3 I 2.4		IIc				ja	Xn
952	malathion mit einem Isomalathiongehalt von weniger als 1,8 %	015-041-00-X *121-75-5*	Xn	20/21/22	2-13	I 2.3 I 2.4		IId				ja	Xn
953	Maleinsäure *Anm. B,D*	607-095-00-3 *110-16-7*	Xi	22-36/37/38	26-28-37								
954	Maleinsäureanhydrid	607-096-00-9 *108-31-6*	Xi	22-36/37/38-42	22-28-39	I 2.2				≥ 1			

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
955	Malonsäuredinitril	608-009-00-7 *109-77-3*	T	23/24/25	23-27						ja	T
956	Mangandioxid *Vgl. 170* Braunstein	025-001-00-3 *1313-13-9*	Xn	20/22	25							
957	MCPA *Vgl. 301* (4-Chlor-2-methyl-phenoxy) -essigsäure	607-051-00-3 *94-74-6*	Xn	20/21/22	2-13	I 2.3		IIc				
958	MCPA-Salze und -Ester *Anm. A*	607-052-00-9	Xn	20/21/22	2-13	I 2.3		IIc				
959	MCPB *Vgl. 300* 4-(4-Chlor-2-methyl-phenoxy)-buttersäure	607-053-00-4 *94-81-5*	Xn	20/21/22	2-13	I 2.3		IIc				
960	MCPB-Salze und -Ester *Anm. A*	607-054-00-X	Xn	20/21/22	2-13	I 2.3		IIc				
961	mecarbam *Vgl. 523* O,O-Diethyl-S-(3-methyl-2,4-dioxo-5-oxa-3-aza-heptyl)-dithiophosphat	015-045-00-1 *2595-54-2*	T	23/24/25	2-13-44	I 2.3 I 2.4	Ib				ja	T,Xn
962	mecoprop *Vgl. 302* 2-(4-Chlor-methyl-phenoxy)-propionsäure	607-049-00-2 *7085-19-0*	Xn	20/21/22	2-13	I 2.3		IIc				
963	mecoprop-Salze *Anm. A*	607-050-00-8	Xn	20/21/22	2-13	I 2.3						

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
964	medinoterb-acetat	*2487-01-8*	T	21-23/25	22-37-38-45	I 2.3 I 2.4					ja	T,Xn
965	Meerzwiebelglykoside		T	23/24/25	2-13-44	I 2.4					ja	T,Xn
966	menazon *Vgl. 417* S-(4,6-Diamino-1,3,5-triazin-2-yl)-methyl-O,O-dimethyl-dithiophosphat	015-053-00-5 *78-57-9*	Xn	20/21/22	2-13	I 2.3 I 2.4					ja	Xn
967	p-Menthadien-1,8(9) *Vgl. 653* Dipenten	601-029-00-7 *138-86-3*	Xi	10-38	28	I 2.1				≥ 25		
968	8-p-Menthanylhydroperoxid	617-012-00-2 *80-47-7*	O,C	11-35	3/7/9-14-27-37/39							
969	mephosfolan *Vgl. 500* 2-(Diethoxyphosphinyl-imino)-4-methyl-1,3-dithiolan	015-094-00-9 *950-10-7*	T	26/27/28	1-13-28-45	I 2.3 I 2.4	Ia				ja	T,Xn
970	Mercaptodimethur (nicht als ISO-Kurzname anerkannt) *Vgl. 607* (3,5-Dimethyl-4-methylthio-phenyl)-N-methylcarbamat	006-023-00-2 *2032-65-7*	T	23/24/25	2-13-44	I 2.3 I 2.4	Ib				ja	T,Xn
971	Mesitylen *Vgl. 1444* 1,3,5-Trimethylbenzol	601-025-00-5 *108-67-8*	Xi	10-37		I 2.1				≥ 25		

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
972	Mesityloxid *Siehe: 1044* 4-Methyl-pent-3-en-2-on											
973	Metaldehyd	605-005-00-7 *9002-91-9*	Xn	10-20/22	2-24/25	I 2.3 I 2.4		IIb			je je	Xn Xn
974	metam-Natrium *Vgl. 1107* Natrium-N-methyl-dithiocarbamat	006-013-00-8 *137-42-8*	Xn	22-38	2-13	I 2.3 I 2.4					je	Xn
975	Metanilsäure *Siehe: 50* 3-Amino-benzolsulfonsäure											
976	Methacrylate, soweit nicht aufgeführt *Anm. A*	607-134-00-4 *18358-13-9*	Xi	36/37/38	26-28	I 2.2				≥ 10		
977	Methacrylnitril *Anm. D* *Vgl. 1046* 2-Methyl-2-propennitril	608-010-00-2 *126-98-7*	F,T	11-23/24/25-43	9-16-18-29-45	I 2.2	> 1	0,2-1			je	T,Xn
978	Methacrylsäure *Anm. D*	607-088-00-5 *79-41-4*	C	34	15-26	I 2.2			> 25	2-25		
979	methamidophos *Vgl. 561* O,S-Dimethyl-amido-thiophosphat	015-095-00-4 *10265-92-6*	T	26/27/28	1-13-28-45	I 2.3 I 2.4	Ia				je	T,Xn
980	Methan	601-001-00-4 *74-82-8*	F	12	9-16-33							

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi			
1	2	3	4	5	6	7	8					9	10
981	Methanol *Vgl. 996* Methylalkohol --- [1])ausgenommen Ottokraftstoffe an Tankstellen	603-001-00-X *67-56-1*	F,T	11-23/25	2-7-16-24	I 2.1	Ic					ja [1])	T,Xn [1])
982	Methanthiol *Vgl. 1035* Methylmercaptan	016-021-00-3 *74-93-1*	F,Xn	13-20	16-25								
983	methidathion *Vgl. 598* O,O-Dimethyl-S-(2-methoxy-1,3,4(4H)-thiadiazol-5-on-4-yl)-methyl-dithiophosphat	015-069-00-2 *950-37-8*	T	26/27/28	1-13-45	I 2.3 I 2.4	Ia					ja	T,Xn
984	methomyl	*16752-77-5*	T	23-28	37-42-45	I 2.3 I 2.4	Ia					ja	T,Xn
985	2-Methoxy-anilin *Anm. C* *Vgl. 80* o-Anisidin	612-035-00-4 *90-04-0*	T	26/27/28-33	28-36/37-45							ja	T
986	4-Methoxy-anilin *Anm C* *Vgl 81* p-Anisidin	612-035-00-4 *104-94-9*	T	26/27/28-33	28-36/37-45							ja	T
987	(2-Methoxycarbonyl-1-methyl-vinyl)-dimethyl-phosphat *Siehe: 1062* mevinphos												

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
988	2-Methoxy-ethanol *Vgl. 1025* Methylglykol	603-011-00-4 *109-86-4*	Xn	10-20/21/22-37	24/25	I 2.1		IIc			ja	Xn
989	2-Methoxy-ethylacetat *Vgl. 1026* Methylglykolacetat	607-038-00-1 *110-49-6*	Xn	10-20/21	24	I 2.1		IId			ja	Xn
990	4-Methoxy-4-methyl-2-pentanon *Vgl. 408* Diacetonalkoholmethylether	606-023-00-8 *107-70-0*		10	23							
991	4-Methoxy-2-nitro-anilin *Vgl. 1125* 2-Nitro-p-anisidin	612-038-00-0 *96-96-8*	T	26/27/28-33	28-36/37-45						ja	T
992	1-Methoxy-2-propanol *Vgl. 1259* Propylenglykolmonomethylether	603-064-00-3 *107-98-2*		10	24							
993	S-(5-Methoxy-4H-pyron-2-yl)-methyl-O,O-dimethyl-thiophosphat *Siehe: 680* endothion											
994	Methylacetat	607-021-00-X *79-20-9*	F	11	16-23-29-33							
995	Methylacrylat *Anm. D*	607-034-00-0 *96-33-3*	F,Xi	11-20/22-36/37/38	9-16-33	I 2.2				≥ 5		
996	Methylalkohol *Siehe: 981* Methanol											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Kennz.-Grenzen in % bzw. Klasse					
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
997	2-Methyl-allylchlorid *Siehe: 303* 3-Chlor-2-methylpropen											
998	Methylamin mono(1),di(2) und tri(3) *Anm. C*	612-001-00-9 *74-89-5 (1)* *124-40-3 (2)* *75-50-3 (3)*	F,Xi	13-36/37	16-26-29							
999	Methylamylalkohol *Siehe: 1042* 4-Methyl-pentan-2-ol											
1000	N-Methyl-anilin	612-015-00-5 *100-61-8*	T	23/24/25-33	28-37-44						ja	T
1001	Methylbromid *Siehe: 180* Brommethan											
1002	2-Methyl-1,3-butadien *Anm. D* *Vgl. 893* Isopren	601-014-00-5 *78-79-5*	F	12	9-16-29-33							
1003	Methylbutan *Siehe: 889* Isopentan											
1004	2-Methylbutanol-2 *Vgl. 1173* tert-Pentanol	603-007-00-2 *75-85-4*	F,Xn	11-20	9-16-24/25	I 2.1		IId				
1005	3-Methylbutan-2-on *Vgl. 1031* Methylisopropylketon	606-007-00-0 *563-80-4*	F	11	9-16-33							

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennz. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1006	6-(1-Methyl-butyl)-2,4-dinitro-phenol *Siehe: 641* dinosam											
1007	Methylbutylketon *Siehe: 856* 2-Hexanon											
1008	7-(N-Methyl-carbamoyloxy)-2-methyl-2,3-dihydro-benzofuran *Siehe: 397* decarbofuran											
1009	Methyl-2-chlor-3-(4-chlor-phenyl)-propionat *Siehe: 288* chlorfenprop-methyl											
1010	Methyl-chlorformiat	607-019-00-9 *79-22-1*	F,T	11-23-36/37/38	9-16-33-44						ja	T
1011	Methylchlorid *Siehe: 298* Chlormethan											
1012	Methylchloroform *Siehe: 1401* 1,1,1-Trichlorethan											
1013	Methylcyclohexan	601-018-00-7 *108-87-2*	F	11	9-16-33							
1014	2-Methylcyclohexanol	603-010-00-9 *583-59-5*	Xn	20	24/25	I 2.1		IId				

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd. Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 26
1	2	3	4	5	6	7	8				9	10
1015	2-Methyl-cyclohexanon	606-011-00-2 *583-60-8*	Xn	10-20	25	1 2 1		IIc				
1016	4,4'-Methylen- bis (2-chloranilin) *Siehe: 1525* 2,2'-Dichlor-4,4'methylendianilin											
1017	Methylen-S,S'-bis(O,O-diethyl-dithiophosphat) *Siehe: 719* ethion											
1018	3,3'-Methylen-bis(4-hydroxy-cumarin) *Siehe: 488* dicumarin											
1019	2,2'-Methylen-bis-(3,4,6-trichlorphenol) *Vgl. 842* Hexachlorophen	604-015-00-9 *70-30-4*	T	24/25	20-37-44	1 2.2 1 2.4	> 2	0.2-2			ja ja	T,Xn T,Xn
1020	Methylenbromid *Siehe: 428* Dibrommethan											
1021	Methylenchlorid *Siehe: 459* Dichlormethan											
1022	4,4'-Methylen-diphenyl-diglycidylether *Vgl. 153* Bis(4,4'-glycidyloxy-phenyl)-propan *Vgl. 151* 2,2-Bis-[4-(2,3-epoxy-propoxy)-phenyl]-propan	603-073-00-2 *1675-54-3*	Xi	36/38-43	28-37/39	1 2.2				≥ 1		

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
							Kennz.-Grenzen in % bzw. Klasse					
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1023	4-Methylen-2-oxetanon *Anm. D* *Vgl. 548* Diketen	606-017-00-5 *674-82-8*	Xn	10-20	3							
1024	Methylformiat	607-014-00-1 *107-31-3*	F	12	9-16-33							
1025	Methylglykol *Siehe: 988* 2-Methoxy-ethanol											
1026	Methylglykolacetat *Siehe: 989* 2-Methoxy-ethylacetat											
1027	5-Methyl-3-heptanon	606-020-00-1 *541-85-5*	Xi	10-36/37	23	1 2 1				≥ 10		
1028	5-Methyl-2-hexanon	606-026-00-4 *110-12-3*	-	10	23							
1029	Methylisobutylketon *Siehe: 1043* 4-Methyl-pentan-2-on											
1030	Methylisocyanat	615-001-00-7 *624-83-9*	F,T	12-23/24/25-36/37/38	9-30-43-44						ja	T
1031	Methylisopropylketon *Siehe: 1005* 3-Methylbutan-2-on											
1032	Methyl-isothiocyanat	615-002-00-2 *556-61-6*	T	10-21-23/25	24/25	1 2 3 1 2 4		Ic			ja	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Konnz.-Grenzen in % bzw. Klasse					
Lfd. Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
1033	Methyljodid *Vgl. 911* Jodmethan	602-005-00-9 *74-88-4*	T	21-23/25 37/38-40	36/37-38-44						ja	T
1034	Methyllaktat	607-092-00-7 *547-64-8*		10-	23							
1035	Methylmercaptan *Siehe: 982* Methanthiol											
1036	Methyl-methacrylat *Anm. D*	607-035-00-6 *80-62-6*	F,Xi	11-36/37/ 38-43	9-16-29-33	1 2 2				≥ 10		
1037	2-Methyl-2-methoxy-4'-phenyl-2,3-dihydro-4,5H-pyrano(3,2-c)-[1]-benzopyran-5-on *Siehe: 1267* pyranocumarin											
1038	2-Methyl-2-methylthiopropionaldehyd-O-(N-methyl-carbamoyl)-oxim *Siehe: 23* aldicarb											
1039	N-Methyl-1-naphthyl-carbamat *Siehe: 253* carbaryl											
1040	1-Methyl-5-norbornen-2,3-dicarbonsäureanhydrid *Anm. C*	607-108-00-1 *25134-21-8*	Xn	22-36/37/ 38-42	39	1 2 2		≥ 10				

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1041	2-Methyl-2,4-pentandiol	603-053-00-3 *107-41-5*	Xi	36/38		I 2.1				≥ 10		
1042	4-Methyl-pentan-2-ol *Vgl. 999* Methylamylalkohol	603-008-00-8 *108-11-2*	Xi	10-37	24/25	I 2.1				≥ 25		
1043	4-Methyl-pentan-2-on *Vgl. 1029* Methylisobutylketon	606-004-00-4 *108-10-1*	F	11	9-16-23-33							
1044	4-Methyl-pent-3-en-2-on *Vgl. 972* Mesityloxid	606-009-00-1 *141-79-7*	Xn	10-20/21/22	25	I 2.1		IIa			ja	Xn
1045	2-Methylpropanol-2 *Vgl. 218* tert.-Butylalkohol	603-005-00-1 *75-65-0*	F,Xn	11-20	9-16	I 2.1		IId				
1046	2-Methyl-2-propennitril *Siehe 977* Methacrylnitril											
1047	Methylpropionat	607-027-00-2 *554-12-1*	F	11	16-23-29-33							
1048	2-Methylpropylacrylat *Anm. D*	607-115-00-0 *106-63-8*	Xn	10-20/21-38-43	9	I 2.2		≥ 10			ja	Xn
1049	6-(1-Methyl-propyl)-2,4-dinitro-phenol *Siehe 643* dinoseb											
1050	[6-(1-Methyl-propyl)-2,4-dinitro-phenyl]-3,3-dimethyl-acrylat *Siehe 142* binapacryl											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
1051	2-Methylpropylmethacrylat *Anm. D*	607-113-00-X *97-86-9*	Xi	10-36/37/38-43		I 2.2				≥ 10		
1052	N-Methyl-2-pyrrolidon	606-021-00-7 *872-50-4*	Xi	36/38	41	I 2.1				≥ 10		
1053	Methylquecksilberdicyandiamid	*502-39-6*	T	23/24/25-33	2-13-20/21-28-36-45						ja	T
1054	o-Methylstyrol *Vgl. 1474* 2-Vinyl-toluol	601-028-00-1 *611-15-4*	Xn	20	24	I 2.1		IIc				
1055	alpha-Methylstyrol *Siehe: 894* Isopropenylbenzol											
1056	2-Methyl-sulfonyl-O-(N-methyl-carbamoyl)-butanon-3-oxim *Siehe: 206* butoxycarboxim											
1057	2-Methyl-thio-O-(N-methyl-carbamoyl)-butanon-3-oxim *Siehe: 205* butocarboxim											
1058	N-Methyl-toluidin *Anm. C*	612-055-00-3 *84875-83-2*	T	23/24/25-33	28-36/37-44						ja	T
1059	Methyltrichlorsilan	014-004-00-5 *75-79-6*	F,Xi	11-14-36/37/38	26-39	I 2.2				≥ 1		
1060	Methylvinylether *Anm. D*	603-021-00-9 *107-25-5*	F	13	9-16-33							

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd Nr	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1061	metoxuron *Vgl 297* 3-(3-Chlor-4-methoxy-phenyl)-1,1-dimethyl-harnstoff	006-033-00-7 *19937-59-8*	Xn	20/21/22	2-13	1 2 3						
1062	mevinphos *Vgl 987* (2-Methoxycarbonyl-1-methyl-vinyl)-dimethyl-phosphat	015-020-00-5 *7786-34-7*	T	26/27/28	1-13-28-45	1 2 3 1 2 4	Ia				ja	T,Xn
1063	mipafox *Vgl 544* N,N'-Diisopropyl-diamido-phosphorsaure-fluorid	015-062-00-4 *371-86-8*	T	26/27/28-39	1-13-45	1 2 3 1 2 4					ja	T,Xn
1064	molinat *2212-67-1*					1 2 3		IIc				
1065	gestrichen											
1066	Monochloressigsäure	607-003-00-1 *79-11-8*	T	23/24/25-35	22-36/37/39	1 2 2 1 2 4	> 5	0,5-5			ja ja	T,Xn T,Xn
1067	Monochloressigsaure Salze *Anm A*		T	25	22-24/25-44	1 2 4					ja	T,Xn
1068	Monochlorpentan *Anm C* *Vgl 74* Amylchloride	602 022-00-1 *543-59-9*	F,Xn	11-20/21/22	9-29	1 2 1		IIc			ja	Xn
1069	monocrotophos *Vgl 598* O,O-Dimethyl-O-cis-(2-N methylcarbamoyl-1-methyl) vinyl phosphat	015-072-00-9 *919-44-8*	T	26/27/28	1-13-28-45	1 2 3 1 2 4	Ia				ja	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi			
1	2	3	4	5	6	7	8					9	10
1070	Monofluor-acetamid	616-002-00-5 *640-19-7*	T	28/27/28	1/2-20-22 -28-45	I 2.3 I 2.4	Ia					ja	T,Xn
1071	Monofluoracetate, lösliche *Anm. A*	607-082-00-2	T	28	1/2-20-22- 28-45	I 2.3 I 2.4						ja	T,Xn
1072	Monofluoressigsäure	607-081-00-7 *144-49-0*	T	28	1/2-20-22- 28-45	I 2.3 I 2.4						ja	T,Xn
1073	monolinuron *Vgl. 317* 3-(4-Chlor-phenyl)-1-methoxy-1-methyl-harnstoff	006-032-00-1 *1746-81-2*	Xn	20/21/22	2-13	I 2.3		IId					
1074	monuron	 *150-68-5*				I 2.3		IId					
1075	morphamquat und seine Salze *Anm. A* *Vgl. 147* Bis-(3,5-dimethyl-morpholino-carbonyl-methyl)1,1'-bipyridylium	613-018-00-4 *4636-83-3(Cl)*	Xn	20/21/22	2-13	I 2.3 I 2.4		IIa				ja	Xn
1076	Morpholin	613-028-00-9 *110-91-8*	C	10-20/21/ 22-34	23-26	I 2.2			>10	1-10			C
1077	morphothion *Vgl. 608* O,O-Dimethyl-S-(morpholino-carbonyl)-methyl-dithiophosphat	015-058-00-2 *144-41-2*	T	23/24/25	2-13-44	I 2.3 I 2.4						ja	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 26
Lfd. Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Konz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1078	Mutterkornalkaloide und deren Salze und Verbindungen *Anm. A*		T	23/25	2-13-45	I 2.4					ja	T,Xn
1079	nabam *Vgl. 629* Dinatrium-[N,N'-ethylen-bis(dithiocarbamat)]	006-014-00-3 *142-59-6*	Xn	22-38	2-13	I 2.3 I 2.4		IIa			ja	Xn
1080	naled *Vgl. 424* O-(1,2-Dibrom-2,2-dichlor-ethyl)-O,O-dimethyl-phosphat	015-056-00-6 *300-76-5*	Xn	20/21/22 -36/37	2-13	I 2.3 I 2.4		IIb			ja	Xn
1081	2-Naphthol *Vgl. 1082* beta-Naphthol	604-007-00-5 *135-19-3*	Xn	20/22	24/25							
1082	beta-Naphthol *Siehe: 1081* 2-Naphthol											
1083	1-Naphthylamin (mit ≥ 1% 2-Naphthylamin) *Anm. K*	612-021-00-8 *134-32-7*	T	26/27/28-45	22-27-36-45						ja	T
1084	1-Naphthylamin (mit < 1% 2-Naphthylamin) *Anm. K*	612-020-00-2 *134-32-7*	Xn	20/21/22-33	22-36							
1085	2-Naphthylamin *Anm. E*	612-022-00-3 *91-59-8*	T	45-22	53-44	II					ja	T
1086	Naphthylen-1,5-diisocyanat	615-007-00-X *3173-72-6*	Xn	20-36/37/38-42	26-28-38-45							

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
Lfd. Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
1087	1-Naphthylessigsäure	607-087-00-X *86-87-3*	Xn	22	24/25							
1088	naphthylindandion *Vgl. 1089* 2-(1-Naphthyl)-indan-1,3-dion	606-015-00-4 *1786-03-4*	T	25	2-13-44	I 2.3					je	T,Xn
1089	2-(1-Naphthyl)-indan-1,3-dion *Siehe: 1088* naphthylindandion											
1090	1-(1-Naphthyl)-2-thioharnstoff *Siehe: 87* Antu (ISO)											
1091	Natrium ..... [2])S5 nicht erforderlich, falls in anderer Weise sicher verpackt	011-001-00-0 *7440-23-5*	F,C	14/15-34	S-8-43 [2])							
1092	Natriumazid	011-004-00-7 *26628-22-8*	T	28-32	28						je	T
1093	Natriumchlorat	017-005-00-9 *7775-09-9*	O,Xn	9-20/22	2-13-16-27	I 2.3 I 2.4					je je	Xn Xn
1094	Natriumdichlorisocyanurat-dihydrat	613-030-01-7	Xn	22-31-36/37	8-26-41							
1095	Natriumdichromat	024-004-00-7 *10588-01-9*	Xi	36/37/38-43	22-28	I 2.2 I 2.3 I 2.4				≥ 0,5		Xi

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Kennz.-Grenzen in % bzw. Klasse					
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
1096	Natriumdithionit	016-028-00-1 *7775-14-6*	Xn	7-22-31	7/8-26-28-43							
1097	Natriumfluorid	009-004-00-7 *7681-49-4*	T	23/24/25	1/2-26-44	I 2.3 I 2.4					je	T,Xn
1098	Natriumhydrid	001-003-00-X *7646-69-7*	F	15	7/8-24/25-43							
1099	Natriumhydrogendifluorid	009-007-00-3 *1333-83-1*	C	25-34	22-26-37	I 2.2 I 2.3 I 2.4			> 1	0,1-1		C,Xi C,Xi C,Xi
1100	Natriumhydroxid, wasserfrei *Vgl. 20* Ätznatron --- [4])ausgenommen Zubereitungen zur Verwendung als Reinigungsmittel in kindergesicherter Verpackung	011-002-00-6 *1310-73-2*	C	35	2-26-37/39	I 2.2 I 2.4			> 5	1-5		C,Xi C,Xi [4])
1101	Natriumhydroxidlösung, 1-5% *Anm. B* *Vgl. 1115* Natronlauge, 1-5%	011-002-02-0	Xi	36/38	2-26							
1102	Natriumhydroxidlösung, > 5% *Anm. B* *Vgl. 1114* Natronlauge, > 5%	011-002-01-3	C	35	2-26-27-37/39							
1103	Natriumhypochloritlösung, > 10% Cl aktiv *Anm. B*	017-011-00-1 *7681-52-9*	C	31-34	2-28							

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
1104	Natriumhypochlorit-lösung, 5-10% Cl aktiv *Anm. B*	017-011-01-9	Xi	31-36/38	2-25							
1105	Natrium-O-isopropyl-dithiocarbonat *Siehe: 1268* proxan-Natrium											
1106	Natriumkakodylat *Siehe: 915* Kakodylsäure, Natriumsalz											
1107	Natrium-N-methyl-dithiocarbamat *Siehe: 974* metam-Natrium											
1108	Natriumnitrit	007-010-00-4 *7632-00-0*	O,T	8-25	44	I 2.2	>5	1-5			je	T,Xn
1109	Natriumperchlorat	017-010-00-6 *7601-89-0*	O,Xn	9-22	2-13-22-27							
1110	Natriumperoxid	011-003-00-1 *1313-60-6*	O,C	8-35	8-27-39							
1111	Natriumpolysulfide	016-010-00-3 *1344-08-7*	C	31-34	26	I 2.3						C,Xi
1112	Natriumsulfid	016-009-00-8 *1313-82-2*	C	31-34	26							
1113	Natrium-trichloracetat *Siehe: 1330* TCA											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1114	Natronlauge, > 5% *Siehe: 1102* Natriumhydroxidlösung, > 5%											
1115	Natronlauge, 1-5% *Siehe: 1101* Natriumhydroxidlösung, 1-5%											
1116	Neopentan *Siehe: 817* Dimethylpropan											
1117	Neopentylglykoldi-acrylat *Siehe: 818* 2,2-Dimethylpropandiol-1,3-diacrylat											
1118	Nickel (in Form atembarer Stäube von Nickelmetall, Nickelsulfid und sulfidischen Erzen, Nickeloxid und Nickelcarbonat) sowie Nickelverbindungen in Form atembarer Tröpfchen *Anm. K*					II						
1119	Nickeltetracarbonyl *Anm. K*	028-001-00-1 *13463-39-3*	F,T	11-26-45	9-23-45	II					Ia	T
1120	Nikotin *Vgl 1276* 3-Pyridyl-N-methylpyrrolidin	614-001-00-4 *54-11-5*	T	25-26/27	28-36/37/39-42-45	1 2 3 1 2 4	Ia				Ia	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Kennz.-Grenzen in % bzw. Klasse					
Lfd. Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
1121	Nikotin-Salze *Anm. A*	614-002-00-X	T	26/27/28	1-13-28-45	I 2.3 I 2.4					ja	T,Xn
1122	Nitriersäure *Siehe: 1292* Salpeter- Schwefelsäure-mischung mit > 30% Salpetersäure											
1123	5-Nitroacenaphthen	609-037-00-02 *602-87-9*	T	45	53-44	II					ja	T
1124	Nitroanilin *Anm. C*	612-012-00-9 *88-74-4 (o)* *99-09-2 (m)* *100-01-6 (p)*	T	23/24/25-33	28-36/37-44						ja	T
1125	2-Nitro-p-anisidin *Siehe: 991* 4-Methoxy-2-nitro-anilin											
1126	Nitrobenzol	609-003-00-7 *98-95-3*	T	26/27/28-33	28-36/37-45	I 2.1	Ia				ja	T,Xn
1127	4-Nitrodiphenyl *Anm. K*	*92-93-3*				II						
1128	Nitroethan	609-035-00-1 *79-24-3*	Xn	10-20/22	9-25-41	I 2.1		IIb				
1129	Nitromethan	609-036-00-7 *75-52-5*	Xn	5-10-22	41	I 2.1		IIb				
1130	2-Nitronaphthalin	609-038-00-8 *581-89-5*	T	45	53-44	II					ja	T

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
1131	p-Nitrophenol *Siehe: 1132* 4-Nitrophenol											
1132	4-Nitrophenol *Vgl. 1131* p-Nitrophenol	609-015-00-2 *100-02-7*	Xn	20/21/22-33	28							
1133	1-Nitropropan	609-001-00-6 *108-03-2*	Xn	10-20/21/22	9	I 2.1		IIa			ja	Xn
1134	2-Nitropropan *Anm. E*	609-002-00-1 *79-46-9*	T	45-10-20/22	53-9-44	I 2.1 II	IIa				ja	T,Xn
1135	4-Nitrosoanilin	612-011-00-3 *659-49-4*	Xn	20/21/22	25-28							
1136	Nitrotoluidin *Anm. C*	612-025-00-X *28676-13-3*	T	23/24/25-33	28-36/37-44						ja	T
1137	2-Nitrotoluol *(1)* 4-Nitrotoluol *(2)* *Anm. C*	609-006-00-3 *88-72-2 (1)* *99-99-0 (2)*	T	23/24/25-33	28-37-44						ja	T
1137a	Nitrozellulose mit höchstens 12,6% Stickstoff	603-037-01-8	F	11	16-33-37/39							
1138	norbormid *Vgl. 873* 5-(alpha-Hydroxy-alpha-2-pyridylbenzyl)-7-(alpha-2-pyridylbenzyl-iden)-bicyclo[2.2.1]hept-5-en-2,3-dicarbonsäureamid	650-004-00-7 *991-42-4*	T	23/24/25	2-13-44	I 2.3 I 2.4	Ia				ja	T,Xn
1139	5-cis-Norbornen-2,3-dicarbonsäureanhydrid	607-105-00-6 *129-64-6*	Xi	36/37/38	39	I 2.2				≥ 1		

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
Lfd. Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
1140	2-Norbornylacrylat *Anm. D*	607-121-00-3 *10027-06-2*	Xn	21-38-43	28	1 2 2		≥ 10			ja	Xn
1141	1,3,4,5,6,7,8,8-Octachlor-1,3,3a,4,7,7a-hexahydro-4,7-endomethano-isobenzofuran *Siehe 881* isobenzan											
1142	1,2,4,5,6,7,8,8-Octachlor-3a,4,7,7a-tetrahydro-4,7-methanoindan *Siehe: 275* Chlordan (ISO)											
1143	Octamethyl-diphosphorsäure-tetramid *Siehe 1297* schradan											
1144	Octan *Anm. C*	601-009-00-8 *111-65-9*	F	11	9-16-29-33							
1145	Oleum, 20-65% Schwefeltrioxid *Anm. B*	016-019-00-2 *8014-95-7*	C	14-35-37	26-30							
1146	omethoat *Vgl. 599* O,O-Dimethyl-S-(N-methyl-carbamoyl)-methyl-thiophosphat	015-066-00-6 *1113-02-6*	T	23/24/25	2-13-44	1 2 3 1 2 4	Ib				ja	T,Xn
1147	Osmiumtetraoxid	076-001-00-5 *20816-12-0*	T	26/27/28-34	7/9-26-45						ja	T

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1148	Oxalsäure	607-006-00-8 *144-62-7*	Xn	21/22	2-24/25	I 2.2 I 2.4		≥ 5			ja ja	Xn Xn
1149	Oxalsäure-Salze *Anm. A*	607-007-00-3	Xn	21/22	2-24/25	I 2.2 I 2.4		≥ 5			ja ja	Xn Xn
1150	Oxalsäuredinitril *Vgl. 491* Dicyan	608-011-00-8 *460-19-5*	F,T	11-23	23-44						ja	T
1151	oxamyl	*23135-22-0*	T	21-26/28	37-42-45	I 2.3 I 2.4					ja	T,Xn
1152	Oxiran *Siehe: 757* Ethylenoxid											
1153	oxydemeton-methyl *Vgl. 775* S-2-Ethylsulfinyl-ethyl-O,O-dimethyl-thiophosphat	015-048-00-7 *301-12-2*	T	23/24/25	2-13-44	I 2.3 I 2.4					ja	T,Xn
1154	oxydisulfoton *Vgl. 513* O,O-Diethyl-S-2-ethylsulfinyl-ethyl-dithiophosphat	015-096-00-X *2497-07-6*	T	26/27/28	1-13-45	I 2.3 I 2.4					ja	T,Xn
1155	Papaverin *Vgl. 554* 1-(3',4'-Dimethoxy-benzyl)-6,7-dimethoxy-isochinolin	614-018-00-7 *58-74-2*	Xn	22	22							
1156	Papaverin-Salze *Anm. A*	614-019-00-2	Xn	22	22							

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8					9	10
1157	Paraldehyd *Siehe: 1450* 2,4,6-Trimethyl-1,3,5-trioxan												
1158	paraquat und seine Salze *Anm. A* *Vgl. 574* 1,1'-Dimethyl-4,4'-bipyridinium	613-008-00-9 *1910-42-5(Cl)*	T	26/27/28	1-13-45	1 2 3 1 2 4						ja	T,Xn
1159	parathion *Vgl. 526* O,O-Diethyl-O-(4-nitrophenyl)-thiophosphat	015-034-00-1 *56-38-2*	T	26/27/28	1-13-28-45	1 2 3 1 2 4	1a					ja	T,Xn
1160	parathion-methyl *Vgl. 609* O,O-Dimethyl-O-(4-nitrophenyl)-thiophosphat	015-035-00-7 *298-00-0*	T	26/27/28	1-13-28-45	1 2 3 1 2 4	1a					ja	T,Xn
1161	PCB *Siehe: 1229* Polychlorierte Biphenyle												
1162	pebulat *Vgl. 225* N-Butyl-N-ethyl-S-propyl-thiocarbamat	006-034-00-2 *1114-71-2*	Xn	20/21/22	2-13	1 2 3 1 2 4		11d				ja	Xn
1163	pendimethalin *Vgl. 773* N-(1-Ethylpropyl)-3,4-dimethyl-2,6-dinitro-phenylamin	*40487-42-1*	Xn	22	22	1 2 3 1 2 4						ja	Xn

Lfd. Nr.	Stoffidentität: Bezeichnung	Stoffidentität: EG-Nummer *CAS-Nummer*	Kennzeichnung Stoff: Kennb. Gef.-Symbol	Kennzeichnung Stoff: Kennziffer für R-Sätze	Kennzeichnung Stoff: Kennziffer für S-Sätze	Kennzeichnung Zubereitungen: Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 26
1	2	3	4	5	6	7	8				9	10
1164	Pentachlorethan	602-017-00-4 *76-01-7*	T	26/27	1-38-45	I 2.1	Ia				ja	T,Xn
1165	Pentachlornaphthalin *Anm. C*	602-041-00-5 *1321-64-8*	Xn	21/22-36/38	35							
1166	Pentachlorphenol	604-002-00-8 *87-86-5*	T	23/24/25	28-36/39-44-52	I 2.2 I 2.3 I 2.4	>5 Ia	0,5-5			ja ja ja	T,Xn [3] T,Xn [3] T,Xn [3]
	..... [3])vor Brand geschützt aufbewahren											
1167	Pentachlorphenol-Alkalisalze *Anm. A*	604-003-00-3	T	23/24/25	28-36/39-44-52	I 2.2 I 2.3 I 2.4	>5	0,5-5			ja ja ja	T,Xn [3] T,Xn [3] T,Xn [3]
	..... [3])vor Brand geschützt aufbewahren											
1168	Pentaerythrittetraacrylat *Anm. D*	607-122-00-9 *4986-89-4*	Xi	36/38-43	26-39	I 2.2				≥ 1		
1169	Pentaerythrittriacrylat *Anm. D*	607-110-00-3 *3524-68-3*	Xi	36/38-43	39	I 2.2				≥ 1		
1170	Pentaethylenhexamin *Siehe: 1336* 3,6,9,12-Tetraazatetradecan-1,14-diamin											
1171	*Pentan*	601-006-00-1 *109-66-0*	F	11	9-16-29-33							
1172	2,4-Pentandion	606-029-00-0 *123-54-6*	Xn	10-22	21-23-24/25	I 2.1		IIc				

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
1173	tert-Pentanol *Siehe: 1004* 2-Methylbutanol-2											
1174	Pentan-3-on *Vgl. 520* Diethylketon	606-006-00-5 *96-22-0*	F	11	9-16-33							
1175	Pentylacetat *Anm. C* *Vgl. 72* Amylacetat	607-130-00-2 *628-63-7*		10	23							
1176	Perchlorethylen *Siehe: 1339* Tetrachlorethen											
1177	Perchlorsäure, > 50% *Anm. B*	017-006-00-4 *7601-90-3*	O,C	5-8-35	23-26-36							
1178	Perchlorsäure, 10-50% *Anm. B*	017-006-01-1	C	34	23-26-36							
1179	Peressigsäure, > 10% *Siehe: 1181* Peroxyessigsäure, > 10%											
1180	Perfluorpropylen *Siehe: 846* Hexafluorpropen											
1181	Peroxyessigsäure, > 10% *Anm. B,D* *Vgl. 1179* Peressigsäure, > 10%	607-094-00-8 *79-21-0*	O,C	5-22-34	3-27-36	12.2			> 10	2-10		

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse						
							T bzw. Klasse	Xn bzw. Klasse	C	Xi			
1	2	3	4	5	6	7	8					9	10
1182	p-Phenetidin *Siehe: 723* 4-Ethoxyanilin												
1183	o-Phenetidin *Siehe: 722* 2-Ethoxyanilin												
1184	phenkapton *Vgl. 473* S-(2,5-Dichlor-phenyl-thio)-methyl-O,O-diethyl-dithiophosphat	015-037-00-8 *2275-14-1*	T	23/24/25	2-13-44	I 2.3 I 2.4						ja	T,Xn
1185	Phenol	604-001-00-2 *108-95-2*	T	24/25-34	2-28-44	I 2.1	Ib					ja	T,Xn
1186	Phenol-Salze *Anm. A*		T	24/25-34	2-28-44	I 2.4						ja	T,Xn
1187	phenthoat *Vgl. 724* S-[alpha-(Ethoxy-carbonyl)-benzyl]-O,O-dimethyl-dithiophosphat	015-097-00-5 *2597-03-7*	Xn	20/21/22	2-13	I 2.3 I 2.4		IIa				ja	Xn
1188	Phenyl-(5,6-dichlor-2-trifluor-methyl-1-benzimidazol)-carboxylat *Siehe: 785* fenazaflor												
1189	Phenylendiamin *Anm. C*	612-028-00-6 *25265-76-3*	T	23/24/25-43	28-44	I 2.2	>5	1-5				ja	T,Xn
1190	1,3-Phenylendiamin-dihydrochloride *(1)* 1,4-Phenylendiamin-dihydrochloride *(2)* *Anm. C*	612-029-00-1 *541-69-5 (1)* *624-18-0 (2)*	T	23/24/25	28-44							ja	T

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. gef. Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1191	Phenylglycidylether *Siehe 689* 1,2-Epoxy-3-phenoxypropan											
1192	Phenylhydrazin	612-023-00-9 *100-63-0*	T	23/24/25- 36	28-44						ja	T
1193	1-Phenyl-3-pyrazolidon	606-022-00-2 *92-43-3*	Xn	22								
1194	Phenylquecksilber-Salze *Anm. A*		T	26/27/28- 33	2-13-28-36 -45	I 2.2 I 2.3 I 2.4	> 0,5	0,05-0,5			ja ja ja	T,Xn T,Xn T,Xn
1195	phorat *Vgl. 517* O,O-Diethyl-S-(ethylthio- -methyl)dithiophosphat	015-033-00-6 *298-02-2*	T	26/27/28	1-13-28-45	I 2.3 I 2.4	le				ja	T,Xn
1196	phosalon *Vgl. 507* O,O-Diethyl-S-(6-chlor- 2-oxo-benz(b)1,3-oxalin- 3-yl)-methyl-dithio- phosphat	015-067-00-1 *2310-17-0*	T	23/24/25	2-13-44	I 2.3 I 2.4					ja	T,Xn
1197	phosazetim *Vgl. 145* O,O-Bis(4-chlor-phenyl)- N-acetamido-thio- phosphoramidat	015-092-00-8 *4104-14-7*	T	26/27/28	1-13-28-45	I 2.3 I 2.4					ja	T,Xn
1198	Phosgen *Siehe 255* Carbonylchlorid											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Kennz.-Grenzen in % bzw. Klasse					
Lfd Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
1199	phosmet *Vgl. 616* O,O-Dimethyl-S-phthal-imido-methyl-dithio-phosphat	015-101-00-5 *732-11-6*	Xn	20/21/22	2-13	I 2.3 I 2.4		IIa			ja	Xn
1200	phosnichlor *Vgl. 308* O-(4-Chlor-3-nitro-phenyl)-O,O-dimethyl-thiophosphat	015-043-00-0 *5826-76-6*	Xn	20/21/22	2-13	I 2.3 I 2.4					ja	Xn
1201	phosphamidon *Vgl. 278* (2-Chlor-3-diethylamino-1-methyl-3-oxo-prop-1-en-yl)-dimethyl-phosphat	015-022-00-6 *13171-21-6*	T	26/27/28	1-13-28-45	I 2.3 I 2.4	Ia				ja	T,Xn
1202	phospholan	*947-02-4*	T	26/27/28	28-36/37/39-42-45	I 2.3 I 2.4	Ia				ja	T,Xn
1203	Phosphoroxidchlorid *Vgl. 1214* Phosphorylchlorid	015-009-00-5 *10025-87-3*	C	34-37	7/8-28							
1204	Phosphorpentachlorid	015-008-00-X *10026-13-8*	C	34-37	7/8-26							
1205	Phosphorpentasulfid *Siehe: 657* Diphosphorpentasulfid											
1206	Phosphorpentoxid	015-010-00-0 *1314-56-3*	C	35	22-26							
1207	Phosphor, roter	015-002-00-7 *7723-14-0*	F	11-16	7-43							

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd. Nr.	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
1208	Phosphor, weißer oder gelber *Siehe: 1359* Tetraphosphor											
1209	Phosphorsäure, > 25% *Anm. B*	015-011-00-6 *7664-38-2*	C	34	26	I 2.2			> 25	10-25		
1210	Phosphorsäure, 10-25% *Anm. B*	015-011-01-3 *7664-38-2*	Xi	36	25							
1211	Phosphorsesquisulfid *Siehe: 1360* Tetraphosphortrisulfid											
1212	Phosphortribromid	015-103-00-6 *7789-60-8*	C	14-34-37	26							
1213	Phosphortrichlorid	015-007-00-4 *7719-12-2*	C	34-37	7/8-26							
1214	Phosphorylchlorid *Siehe: 1203* Phosphoroxidchlorid											
1215	phoxim *Vgl. 364* O-(2-Cyano-benzylidenamino)-O,O-diethyl-thiophosphat	015-100-00-X *14816-18-3*	Xn	20/21/22	2-13	I 2.3		IId				
1216	Phthalimido-dichlorfluor-thiomethan *Siehe: 456* N-(Dichlorfluormethyl-thio)phthalimid											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1217	Phthalsäureanhydrid	607-009-00-4 *85-44-9*	Xi	36/37/38		I 2.2				> = 5		
1218	Physostigmin *Siehe: 703* Eserin											
1219	Pilocarpin *Vgl. 769* 3-Ethyl-4-(1-methyl-imidazol-5-yl-methyl)-tetrahydrofuran-2-on	614-016-00-6 *92-13-7*	T	26/28	1-25-45	I 2.4	> 0,1	> 0,01-0,1			ja	T,Xn
1220	Pilocarpin-Salze *Anm. A*	614-017-00-1	T	26/28	1-25-45	I 2.4	> 0,1	> 0,01-0,1			ja	T,Xn
1221	2-Pinanylhydroperoxid	617-005-00-4 *5405-84-5*	O,C	11-35	3/7/9-14-27-37/39							
1222	pindon *Vgl. 1228* 2-Pivaloyl-indan-1,3-dion	606-016-00-X *83-26-1*	T	25	2-13-44	I 2.3 I 2.4					ja	T,Xn
1223	Piperazin	612-057-00-4 *110-85-0*	C	34	26-36							
1224	Piperidin	613-027-00-3 *110-89-4*	F,T	11-23/24-34	16-26-27-44	I 2.1	Ib				ja	T,Xn
1225	pirimicarb *Vgl. 583* 5,6-Dimethyl-2-dimethyl-amino-pyrimidin-4-yl-N,N-dimethylcarbamat	006-035-00-8 *23103 98-2*	T	23/24/25	2 13-44	I 2.3 I 2.4					ja	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
Lfd Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb Gef.-Symbol	Kennziffer *für R Sätze*	Kennziffer *für S-Sätze*	Kennz nach Anhang	Kennz Grenzen in % bzw Klasse: T bzw Klasse	Xn bzw Klasse	C	X_i	Sachkenntnis nach § 12 Abs 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
1226	pirimiphos-ethyl *Vgl. 509* O,O-Diethyl-O-(2-diethylamino-6-methyl-pyrimidin-4-yl)-thiophosphat	015-099-00-6 *5221-49-8*	T	23/24/25	2-13-44	1 2 3 1 2 4	Ic				ja	T,Xn
1227	pirimiphos-methyl *Vgl. 582* O,O-Dimethyl-O-(2-diethylamino-6-methyl-pyrimidin-4-yl)-thiophosphat	*29232-93-7*	Xn	20/21/22	22-37	1 2 3 1 2 4					ja	Xn
1228	2-Pivaloyl-indan-1,3-dion *Siehe: 1222* pindon											
1229	Polychlorierte Biphenyle *Anm. C* *Vgl. 1161* PCB	602-039-00-4 *1336-36-3*	Xn	33	35						ja	Xn
1230	Polyethylenamine; C4 bis C18 Kettenlänge *Anm. C*	612-065-00-8 *26336-38-9*	C	21/22-34-43	26-36/37/39	1 2 2			> 10	2-10		C
1231	profenophos	*41198-08-7*	T	20/22-24	22-36/37-45	1 2 3					ja	T,Xn
1232	promecarb *Vgl. 908* 3-Isopropyl-5-methyl-phenyl-N-methyl-carbamat	006-037-00-9 *2631-37-0*	T	23/24/25	2-13-44	1 2 3 1 2 4	Ib				ja	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Satze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw Klasse: T bzw Klasse	Xn bzw Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1233	promurit *5836-73-7*		T	26/27/28	28-36/37-45	1 2 3 1 2 4	Ia				ja	T,Xn
1234	promurit-verbindungen		T	26/27/28	28-36/37-45	1 2 3 1 2 4					ja	T,Xn
1235	propachlor *Vgl. 908* N-Isopropyl-N-phenyl-2-chlor-acetamid	616-008-00-8 *1918-16-7*	Xn	20/21/22 -36	2-13	1 2 3 1 2 4					ja	Xn
1236	Propan	601-003-00-5 *74-98-6*	F	13	9-16-33							
1237	Propanal *Vgl. 1248* Propionaldehyd	605-018-00-8 *123-38-6*	F,Xi	11-36/37/38	9-16-29							
1238	propanil *Vgl. 472* N-(3,4-Dichlor-phenyl)-propionamid	616-009-00-3 *709-98-8*	Xn	20/21/22	2-13	1 2 3 1 2 4		IId			ja	Xn
1239	1-Propanol *Anm. C* *Vgl. 1255* Propylalkohol	603-003-00-0 *71-23-8*	F	11	7-16							
1240	2-Propanol *Anm. C* *Vgl. 899* Isopropylalkohol	603-003-00-0 *67-63-0*	F	11	7-16							
1241	1,3-Propansulton *Anm. E*	016-032-00-3 *1120-71-4*	T	45-21/22	53-44						ja	T

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Kennz.-Grenzen in % bzw. Klasse					
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
1242	propargit					I 2.3		IId				
1243	Propen *Vgl. 1258* Propylen	601-011-00-9 *115-07-1*	F	13	9-16-33							
1244	2-Propenal *Anm. O* *Vgl. 14* Acrolein	605-008-00-3 *107-02-8*	F,T	11-23-36/37/38	29-33-44	I 2.3	Ib				ja	T,Xn
1245	2-Propen-1-ol *Vgl. 29* Allylalkohol	603-015-00-6 *107-18-6*	F,T	11-26-36/37/38	16-39-45	I 2.1 I 2.3	Ia Ib				ja ja	T,Xn T,Xn
1246	propetamphos *Vgl. 895* O-2-Isopropoxy-carbonyl-1-methyl-vinyl-O-methyl-ethylamidothiophosphat	*31218-83-4*	T	20/21-25	22-37-38-45	I 2.3 I 2.4					ja	T,Xn
1247	1,3-Propiolacton *Siehe: 1571* 3-Propanolid											
1248	Propionaldehyd *Siehe 1237* Propanal											
1249	Propionsäure, > 25% *Anm. B*	607-089-00-0 *79-09-4*	C	34	2-23-26	I 2.2			> 25	10-25		
1250	Propionsäure, 10-25% *Anm. B*	607-089-01-8 *79-09-4*	Xi	36/37/38	2							
1251	Propionsäureanhydrid	607-010-00-X *123-62-6*	C	34	26	I 2.1			> 25	10-25		

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1252	Propionylchlorid	607-083-00-2 *79-03-8*	F,C	11-14-34	9-16-26							
1253	propoxur *Vgl. 897* 2-Isopropoxy-phenyl-N-methyl-carbamat	006-016-00-4 *114-26-1*	T	23/24/25	2-13-44	12.3 12.4	Ic				ja	T,Xn
1254	Propylacetat *(1)* Isopropylacetat *(2)* *Anm. C* *Vgl. 898* Isopropylacetat	607-024-00-6 *109-60-4 (1)* *108-21-4 (2)*	F	11	16-23-29-33							
1255	Propylalkohol *Siehe: 1239* 1-Propanol											
1256	Propylbenzol	601-024-00-X *103-65-1*	Xi	10-37		12.1				≥ 25		
1257	Propylbromid *Siehe: 187* 1-Brompropan											
1258	Propylen *Siehe: 1243* Propen											
1259	Propylenglykolmonomethyl-ether *Siehe: 992* 1-Methoxy-2-propanol											
1260	Propylenimin *Siehe: 1555* 2-Methylaziridin											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1261	1,2-Propylenoxid *Siehe: 690* 1,2-Epoxypropan											
1262	1,3-Propylenoxid *Siehe: 691* 1,3-Epoxypropan											
1263	Propylformiat *(1)* Isopropylformiat *(2)* *Anm. C* *Vgl. 904* Isopropylformiat	607-016-00-2 *110-74-7 (1)* *625-55-8 (2)*	F	11	9-16-33							
1264	Propylpropionat	607-030-00-9 *106-36-5*		10								
1265	prothoat *Vgl. 518* O,O-Diethyl-S-(N-isopropyl-carbamoyl-methyl)-dithiophosphat	015-032-00-0 *2275-18-5*	T	26/27/28	1-13-45	I 2.3 I 2.4	Ia				ja	T,Xn
1266	proxan-Natrium *Vgl. 1105* Natrium-O-Isopropyl-dithiocarbonat	006-024-00-8 *140-93-2*	Xn	22-38	2-13	I 2.3						
1267	pyranocumarin *Vgl. 1037* 2-Methyl-2-methoxy-4'-phenyl-2,3-dihydro-4,5H-pyrano(3,2-c)-[1]-benzo-pyran-5-on		Xn	20/21/22	22-37	I 2.3 I 2.4					ja	Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1268	pyrazophos *Vgl. 521* O,O-Diethyl-O-[5-methyl-6-carbethoxy-pyrazolo-(1,5a)-pyrimidyl-2]-thiophosphat	*13457-18-6*	Xn	20/21/22	22-37	I 2.3 I 2.4					ja	Xn
1269	pyrazoxon *Vgl. 524* O,O-Diethyl-O-(3-methyl-1H-pyrazol-5-yl)phosphat	015-023-00-1 *108-34-9*	T	26/27/28	1-13-28-45	I 2.3 I 2.4					ja	T,Xn
1270	Pyrethrine einschließlich Cinerine *Vgl. 1273* Pyrethrin I und II, *Cinerin I und II, Jasmolin* I und II (Gemisch)	613-022-00-6	Xn	20/21/22	2-13	I 2.3 I 2.4					ja	Xn
1271	Pyrethrin I *Vgl. 806* 2,2-Dimethyl-3-(2-methyl-prop-1-enyl)-cyclopropan-carbonsäure-O-(+)cis-4-[3-methyl-2-(penta-2,4-dienyl)-cyclopent-2-en-1-on]-ester	613-023-00-1 *121-21-1*	Xn	20/21/22	2-13							
1272	Pyrethrin II *Vgl. 595* 2,2-Dimethyl-3-(3-methoxy-2-methyl-3-oxo-prop-1-enyl)cyclopropan-carbonsäure-O(+)cis-4-[3-methyl-2-2(penta-2,4-dienyl)-cyclopent-2-en-1-on]-ester	613-024-00-7 *121-29-9*	Xn	20/21/22	2-13							

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
1273	Pyrethrin I und II, Cinerin I und II, Jasmolin I und II (Gemisch) *Siehe: 1270* Pyrethrine einschließlich Cinerine											
1274	pyridaphention	*119-12-0*	Xn	20/21/22	22-37	I 2.3						
1275	Pyridin	613-002-00-7 *110-86-1*	F,Xn	11-20/21/22	26-28	I 2.1		IIa			ja	Xn
1276	3-Pyridyl-N-methylpyrrolidin *Siehe: 1120* Nikotin											
1277	Pyrogallol *Siehe: 1437* 1,2,3-Trihydroxybenzol											
1278	Pyromellitsäuredianhydrid *Vgl. 124* 1,2,4,5-Benzoltetracarbonsäuredianhydrid	607-098-00-X *89-32-7*	Xi	36/37/38	25	I 2.2				≥ 1		
1279	Quecksilber	080-001-00-0 *7439-97-6*	T	23-33	7-44						ja	T
1280	Quecksilberalkyle *Anm. A*	080-007-00-3	T	26/27/28-33	2-13-28-36-45	I 2.2 I 2.4	> 0,1	0,05-0,1			ja ja	T,Xn T,Xn
1281	Quecksilber(I)-chlorid *Vgl. 932* Kalomel	080-003-00-1 *10112-91-1*	Xn	22	2	I 2.3 I 2.4		IIa			ja	Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1282	Quecksilber-Verbindungen, anorganische, soweit nicht aufgeführt; ausgenommen: Quecksilber(II)-sulfid (Zinnober) *Anm. A*	080-002-00-8	T	26/27/28-33	1/2-13-28-45	I 2.2 I 2.4	> 0,5	0,1-0,5			je je	T,Xn T,Xn
1283	Quecksilber-Verbindungen, organische, soweit nicht aufgeführt *Anm. A*	080-004-00-7	T	26/27/28-33	2-13-28-36-45	I 2.2 I 2.3 I 2.4	> 0,5	0,05-0,5			je je je	T,Xn T,Xn T,Xn
1284	Resmethrin	*10453-86-8*	Xn	20/21/22	2-13	I 2.3 I 2.4					je	Xn
1285	Resorcin *Siehe: 537* 1,3-Dihydroxybenzol											
1286	Resorcinoldiglycidylether *Siehe: 149* 1,3-Bis(2,3-epoxypropoxy)benzol											
1287	Rhodanwasserstoffsäure	615-003-00-8 *463-56-9*	Xn	20/21/22-32	2-13							
1288	Rhodanwasserstoffsäure-Salze *Anm. A*	615-004-00-3	Xn	20/21/22-32	2-13							
1289	Rotenon *Vgl. 1352* 1,2,12,12-alpha-Tetrahydro-2-alpha-isopropenyl-8,9-dimethoxy-[1]benzopyrano[3,4-b]furo[2,3-h][1]benzopyran-6(6-alpha-alpha-H)-on	650-005-00-2 *83-79-4*	T	26/27/28	36/37/39-42-45	I 2.3 I 2.4					je	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1290	Salpetersäure, 20-70% *Anm. B*	007-004-01-9	C	35	2-23-26-27							
1291	Salpetersäure, > 70% *Anm. B*	007-004-00-1 *7697-37-2*	O,C	8-35	23-26-36	I 2.2			> 20	5-20		
1292	Salpeter- Schwefelsäure-mischung mit > 30% Salpeter-säure *Anm. B* *Vgl. 1122* Nitriersäure	007-005-00-7 *51802-38-1*	O,C	8-35	23-26-30 -36							
1293	Salpetrigsaure Salze *Anm. A*		Xn	22	2-13	I 2.4						
1294	Salzsäure, > 25% *Anm. B*	017-002-01-X *7647-01-0*	C	34-37	2-26	I 2.2 I 2.4			> 25	10-25		C,Xi C,Xi
1295	Salzsäure, 10-25% *Anm. B*	017-002-02-7	Xi	36/38	2-28	I 2.4						
1296	Sauerstoff, flüssiger	008-001-00-8 *7782-44-7*	O	8-34	21							
1297	schradan *Vgl. 1143* Octamethyl-diphosphor-säure-tetramid	015-026-00-8 *152-16-9*	T	26/27/28	1-13-28-45	I 2.3 I 2.4	Ia				ja	T,Xn
1298	Schwefeldichlorid	016-013-00-X *10545-99-0*	C	14-34-37	26							
1299	Schwefeldioxid	016-011-00-9 *7446-09-5*	T	23-36/37	7/9-44						ja	T

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1300	Schwefelkohlenstoff *Siehe: 938* Kohlendisulfid											
1301	Schwefelsäure, >15% *Anm. B*	016-020-00-8 *7664-93-9*	C	35	2-26-30	I 2.2			>15	5-15		
1302	Schwefelsäure, 5-15% *Anm. B*	016-020-01-5	Xi	36/38	2-26							
1303	Schwefeltetrachlorid	016-014-00-5 *13451-08-6*	C	14-34-37	26							
1304	Schwefelwasserstoff	016-001-00-4 *7783-06-4*	F,T	13-26	7/9-25-45						ja	T
1305	Scopolamin *Vgl. 898* L-6,7-Epoxy-tropyl-tropat	614-014-00-5 *51-34-3*	T	26/27/28	1-25-45	I 2.4	>0,1	>0,01-0,1			ja	T,Xn
1306	Scopolamin-Salze *Anm. A*	614-015-00-0	T	26/27/28	1-25-45	I 2.4	>0,1	>0,01-0,1			ja	T,Xn
1307	Selen	034-001-00-2 *7782-49-2*	T	23/25-33	20/21-28-44	I 2.4					ja	T,Xn
1308	Selenverbindungen, ausgenommen: Cadmium-sulfoselenid *Anm. A*	034-002-00-8	T	23/25-33	20/21-28-44						ja	T
1309	Senföl *Vgl. 36* ätherisches Allylsenföl	*57-06-7*	T	23/25-33	1-13						ja	T

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
Lfd. Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw Klasse	Xn bzw Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
1310	Silbernitrat	047-001-00-2 *7761-88-8*	C	34	2-26							
1311	Siliciumchloroform *Siehe: 1419* Trichlorsilan											
1312	Siliciumtetrachlorid	014-002-00-4 *10026-04-7*	Xi	14-36/37/38	7/8-26							
1313	Stickstoffdioxid *(1)* Distickstofftetroxid *(2)* *Vgl. 884* Distickstofftetroxid	007-002-00-0 *10102-44-0(1)* *10544-72-6(2)*	T	26-37	7/9-26-45						ja	T
1314	Strontiumchromat *Anm. E*	024-009-00-4 *7789-06-2*	T	45-22	53-44	II					ja	T
1315	g-Strophantin *Vgl. 848* 1-beta,3-beta,5-beta,11-beta,14-beta,19-Hexahydroxy-[20(22)-cardenolid]-3-L-rhamnosid	614-025-00-5 *630-60-4*	T	23/25-33	44	I 2.4	>0,1	>0,01-0,1			ja	T,Xn
1316	K-Strophantin *Vgl. 540* 5-beta,14-beta-Dihydroxy-3-beta-(beta-D-glucopyranosido-4-beta-D-glucopyranosido-beta-D-cymaropyranosido)-19-oxo-card-20(22)-enolid	614-026-00-0 *11005-63-3*	T	23/25-33	44	I 2.4	>0,1	>0,01-0,1			ja	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1317	*Strychnin* *Vgl. 398* 2,4a,5,5a,6,16,16a,16b,15c-Decahydro-4,6-methano-14H,16H,-indolo[3,2,1-ij]oxepino[2,3,4-de]pyrrolo[2,3-h]chinolin-14-on	614-003-00-5 *57-24-9*	T	28/28	1-13-45	I 2.3 I 2.4	Ia				ja	T,Xn
1318	Strychnin-Salze *Anm. A*	614-004-00-0	T	28/28	1-13-28-45	I 2.3 I 2.4					ja	T,Xn
N 1319	Styrol *Anm. D*	601-026-00-0 *100-42-5*	Xi	10-36/37		I 2.1				≥ 25		
N 1320	sulfallat *Vgl. 284* S-2-Chlor-allyl-N,N-diethyl-dithiocarbamat	006-038-00-4 *95-06-7*	Xn	20/22-36/38	2-13	I 2.3 I 2.4		IIc			ja	Xn
1321	Sulfaminsäure *Siehe: 47* Amidosulfonsäure											
1322	Sulfanilsäure *Siehe: 51* 4-Amino-benzolsulfonsäure											
1323	Sulfolan *Siehe: 1355* Tetrahydrothiophen-1,1-dioxid											
1324	sulfotep *Vgl. 1346* O,O,O,O-Tetraethyl-dithio-diphosphat	015-027-00-3 *3689-24-5*	T	26/27/28	1-13-28-45	I 2.3 I 2.4	Ia				ja	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Kennz.-Grenzen in % bzw. Klasse					
Lfd. Nr.	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
1325	Sulfurylchlorid	016-016-00-6 *7791-25-5*	C	14-34-37	26							
1326	2,4,5-T *Vgl. 1412* (2,4,5-Trichlor-phenoxy)-essigsäure -------- [3])vor Brand geschützt aufbewahren	607-041-00-9 *93-76-5*	Xn	20/21/22	2-13	I 2.3		IIb				[3])
1327	2,4,5-T-Salze und -Ester *Anm. A* -------- [3])vor Brand geschützt aufbewahren	607-042-00-4	Xn	20/21/22	2-13	I 2.3		IIb				[3])
1328	2,3,6-TBA	*50-31-7*				I 2.3		IId				
1329	TBTO *Vgl. 158* Bis-(tri-n-butyl-zinn)-oxid	*56-35-9*	T	23/24/25	2-13-44	I 2.2 I 2.3 I 2.4	> 1	0,25-1			ja ja ja	T,Xn T,Xn T,Xn
1330	TCA *Vgl. 1113* Natrium-trichloracetat	607-005-00-2 *650-51-1*	Xn	22	24/25	I 2.3						
1331	tebuthiuron *Vgl. 232* 1-(5-tert-Butyl-1,3,4-thia-diazol-2-yl)-harnstoff	*34014-18-1*	Xn	20/21/22	22-37	I 2.3 I 2.4					ja	Xn
1332	temephos *Vgl. 1367* O,O'-(Thiodi-p-phenylen)-bis-(O,O'-dimethyl-thiophosphat)	*3383-96-8*	Xn	20/21/22	22-37	I 2.3 I 2.4					ja	Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1333	TEPP *Vgl. 1345* Tetraethyl-diphosphat	015-025-00-2 *107-49-3*	T	26/27/28	1-13-28-45	I 2.3 I 2.4	Ia				ja	T,Xn
1334	terbufos *Vgl. 233* S-(tert-Butyl-thio-methyl-diethyl-dithiophosphat)	*13071-79-9*	T	26/27/28-36/38	28-36/37/39-45	I 2.3 I 2.4					ja	T,Xn
1335	Terpentinöl	650-002-00-6 *8006-64-2* *(MIX)* -	Xn	10-20/21/22	2	I 2.1		IIc			ja	Xn
1336	3,6,9,12-Tetraazatetradecan-1,14-diamin *Vgl. 1170* Pentaethylenhexamin	612-064-00-2 *4067-16-7*	C	34-43	26-36/37/39	I 2.2			>10	2-10		
1337	1,1,2,2-Tetrabromethan *Vgl. 11* Acetylentetrabromid	602-018-00-9 *79-27-6*	T	26-36	1-24-27-45	I 2.1	Ia				ja	T,Xn
1338	1,1,2,2-Tetrachlorethan	602-015-00-3 *79-34-5*	T	26/27	2-38-45	I 2.1	Ia				ja	T,Xn
N 1339	Tetrachlorethen *Vgl. 1178* Perchlorethylen	602-028-00-4 *127-18-4*	Xn	20/22	2-25	I 2.1		IIb				
1340	Tetrachlorkohlenstoff *Siehe: 1341* Tetrachlormethan											
1341	Tetrachlormethan *Vgl. 1340* Tetrachlorkohlenstoff	602-008-00-5 *56-23-5*	T	26/27	2-38-45	I 2.1 I 2.3	Ia Ia				ja ja	T,Xn T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1342	2,3,5,6-Tetrachloro-pyridyl-4-methylsulfon	613-032-00-0 *13108-52-6*	Xn	21/22-36-43	26/28							
1343	2,3,4,6-Tetrachlorphenol	604-013-00-8 *58-90-2*	T	25-36/38	26-28-37-44	I 2.2 I 2.3 I 2.4	> 5	0,5-5			ja ja ja	T,Xn T,Xn T,Xn
1344	tetrachlorvinphos *Vgl. 334* 2-Chlor-1-(2,4,5-trichlor-phenyl)-vinyl-dimethyl-phosphat	*961-11-5*	Xn	20/21/22	22-37	I 2.3 I 2.4					ja	Xn
1345	Tetraethyl-diphosphat *Siehe: 1333* TEPP											
1346	O,O,O,O-Tetraethyl-dithio-diphosphat *Siehe: 1324* sulfotep											
1347	Tetraethylenpentamin *Siehe: 1385* 3,6,9-Triazaundecan-1,11-diamin											
1348	Tetraethylsilikat	014-005-00-0 *78-10-4*	Xn	10-20-36/37								
1349	Tetrafluorborsäure, > 25% *Anm. B* *Vgl. 166* Borfluorwasserstoffsäure	009-010-00-X *16872-11-0*	C	34	26-27	I 2.2			> 25	10-25		
1350	Tetrahydrofuran	603-025-00-0 *109-99-9*	F,Xi	11-19-36/37	16-29-33	I 2.1				≥ 25		

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1351	Tetrahydrofurfurylalkohol *Vgl. 868* 2-Hydroxymethyltetrahydrofuran	603-081-00-7 *97-99-4*	Xi	36	39	I 2.1				≥ 10		
1352	1,2,12,12-alpha-Tetrahydro-2-alpha-isopropenyl-8,9-dimethoxy-[1]benzopyrano(3,4-b)furo[2,3-h][1]benzopyran-6(6-alpha-alpha-H)-on *Siehe: 1289* Rotenon											
1353	1,2,3,4-Tetrahydro-1-naphthylhydroperoxid *Vgl. 1358* 1-Tetralinhydroperoxid	617-004-00-9 *771-29-9*	O,C	11-36	3/7/8-14-27-37/39							
1354	Tetrahydrophthalsäureanhydrid	607-096-00-5 *85-43-8*	Xi	36/37	26	I 2.2				≥ 1		
1355	Tetrahydrothiophen-1,1-dioxid *Vgl. 1323* Sulfolan	016-031-00-8 *126-33-0*	Xn	22	25	I 2.1		IId				
1356	1-Tetralinhydroperoxid *Siehe: 1353* 1,2,3,4-Tetrahydro-1-naphthylhydroperoxid											
1357	N,N,N',N'-Tetramethyldiamido-phosphorsäurefluorid *Siehe: 550* dimefox											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1358	N,N,N',N'-Tetramethyl-p-phenylendiamin	612-032-00-8 *100-22-1*	Xn	20/21/22	28							
1359	Tetraphosphor *Vgl. 1208* Phosphor, weißer oder gelber	015-001-00-1 *12185-10-3*	F,T	17-26/28-35	5-26-28-45	I 2.3 I 2.4					ja ja	T,Xn T,Xn
1360	Tetraphosphortrisulfid *Vgl. 1211* Phosphorsesquisulfid	015-012-00-1 *1314-85-8*	F,Xn	11-22	7-16-24/25							
1361	O,O,O,O-Tetrapropyl-dithiopyrophosphat	015-081-00-8 *3244-90-4*	Xn	20/21/22	2-13	I 2.3 I 2.4					ja	Xn
1362	Thallium	081-001-00-3 *7440-28-0*	T	26/28-33	2-13-28-45						ja	T
1363	Thallium-Verbindungen *Anm. A*	081-002-00-9	T	26/28-33	2-13-28-45	I 2.3 I 2.4					ja	T,Xn
1364	Thiazafluron *Vgl. 624* 1,3-Dimethyl-1-(5-trifluormethyl-1,3,4-thiadiazol-2-yl)-harnstoff	*25366-23-8*	Xn	20-22	2-13	I 2.3 I 2.4					ja	Xn
1365	thiochinox *Vgl. 259* S,S-Chinoxalin-2,3-diyl-trithiocarbonat	613-019-00-X *93-75-4*	Xn	20/22	2-13-24							
1366	thiocyclam *Vgl. 625* N,N-Dimethyl-N-1,2,3-trithian-5yl-amin-hydrogenoxalat	*31895-21-3*	Xn	20/21/22-36/38	22-37/39	I 2.3 I 2.4					ja	Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Kennz.-Grenzen in % bzw. Klasse					
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
1367	O,O'-(Thiodi-p-phenylen)-bis-(O,O'-dimethyl-thiophosphat) *Siehe: 1332* temephos											
1368	Thioglykolsäure	607-090-00-6 *68-11-1*	T	23/24/25-34	2-25-27-28	I 2.2	>2	0,2-2			ja	T,Xn
1369	thiometon *Vgl. 778* S-(2-Ethylthio-ethyl)-O,O-dimethyl-dithio-phosphat	015-050-00-9 *640-15-3*	T	23/24/25	2-13-44	I 2.3 I 2.4	Ic				ja	T,Xn
1370	Thionazin	 *297-97-2*	T	26/27/28	2-13-20/21-27-28-36-45	I 2.3 I 2.4	Ia				ja	T,Xn
1371	Thionylchlorid	016-015-00-0 *7719-09-7*	C	14-34-37	26							
1372	thiram *Vgl. 148* Bis(dimethyl-thiocarb-amoyl)-disulfid	006-005-00-4 *137-26-8*	Xn	22-38	2-13	I 2.3 I 2.4		IIb			ja	Xn
1373	Titantetrachlorid	022-001-00-5 *7550-45-0*	C	14-34-36/37	7/8-26							
1374	4-Toluensulfonylisocyanat *Vgl. 1381* Tosylisocyanat *Vgl. 1379* 4-Toluylsulfonylisocyanat	615-012-00-7 *4083-64-1*	Xi	14-36/37/38-42	26-28-30	I 2.2				≥ 5		

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Kennz.-Grenzen in % bzw. Klasse					
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
1375	Toluidine *Anm. C*	612-024-00-4 *95-53-4 (o)* *108-44-1 (m)* *106-49-0 (p)*	T	23/24/25-33	28-36/37-44						ja	T
1376	Toluol	601-021-00-3 *108-88-3*	F,Xn	11-20	16-25-33	I 2.1		IIc				
1377	p-Toluolsulfonsäure (mit mehr als 5% Schwefelsäure)	016-029-00-7 *104-15-4*	C	34	26-37/39	I 2.2			> 25	10-25		
1378	p-Toluolsulfonsäure (mit höchstens 5% Schwefelsäure)	016-030-00-2 *104-15-4*	Xi	36/37/38	26-37	I 2.2				≥ 75		
1379	4-Toluylsulfonylisocyanat *Siehe: 1374* 4-Toluensulfonylisocyanat											
1380	Tosylchloramid-natrium *Siehe: 268* Chloramin T											
1381	Tosylisocyanat *Siehe: 1374* 4-Toluensulfonylisocyanat											
1382	triallat *Vgl. 1395* S-2,3,3-Trichlor-allyl-N,N-diisopropyl-thiocarbamat	006-039-00-X *2303-17-5*	Xn	20/22	2-13	I 2.3 I 2.4		IId			ja *)	Xn
1383	triamifos *Vgl. 60* 5-Amino-3-phenyl-1-bis (dimethylamino)-phosphoryl-1H-1,2,4-triazol	015-024-00-7 *1031-47-6*	T	26/27/28	1-13-45	I 2.3 I 2.4	Ia				ja	T,Xn

Lfd. Nr.	Stoffidentität: Bezeichnung	EG-Nummer CAS-Nummer	Kennzeichnung Stoff: Kennb. Gef.-Symbol	Kennzeichnung Stoff: Kennziffer für R-Sätze	Kennzeichnung Stoff: Kennziffer für S-Sätze	Kennzeichnung Zubereitungen: Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
1384	trierimol *Vgl. 471* alpha-2,4-Dichlor-phenyl-alpha-phenyl-pyrimidin-5-yl-methanol	603-043-00-9 *26766-27-8*	Xn	20/22	2-13	I 2.3 I 2.4					ja	Xn
1385	3,6,9-Triazaundecan-1,11-diamin *Vgl. 1347* Tetraethylenpentamin	612-060-00-0 *112-57-2*	C	21/22-34-43	26-36/37/39	I 2.2			>10	1-10		C
1386	Tribrommethan *Vgl. 182* Bromoform	602-007-00-X *75-25-2*	T	23-36/38	28-44						ja	T
1387	Tributyl-(2,4-dichlor-benzyl)-phosphonium-Salze *Siehe: 290* chlorfonium-Salze											
1388	Tributylphosphat	015-014-00-2 *126-73-8*	Xn	22	25							
1389	Tributylzinnaphthenat	050-016-00-7 *85631-23-9*	Xn	20/21/22	26-28	I 2.2 I 2.3 I 2.4		≥ 2			ja ja	Xn Xn
1390	Tributylzinnlinoleat	050-015-00-1 *24124-25-2*	Xn	20/21/22	26-28	I 2.2 I 2.3 I 2.4		≥ 2			ja ja	Xn Xn
1391	Tributylzinnoleat	050-014-00-6 *3090-35-5*	Xn	20/21/22	26-28	I 2.2 I 2.3 I 2.4		≥ 2			ja ja	Xn Xn
1392	Tributylzinn-Verbindungen, soweit nicht aufgeführt *Anm. A*	050-008-00-3	T	23/24/25	26-27-28-44	I 2.2 I 2.3 I 2.4	>1	0,25-1			ja ja	T,Xn T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kenns. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1393	Trichloracetaldehyd-monohydrat *Siehe: 283* Chloralhydrat											
1394	Trichloracetonitril	608-002-00-9 *545-08-2*	T	23/24/25	44	I 2.3 I 2.4					ja	T,Xn
1395	S-2,3,3-Trichlor-allyl-N,N-diisopropyl-thiocarbamat *Siehe: 1382* triallat											
1396	2,2,2-Trichlor-1,1-bis (4-chlor-phenyl)-ethanol *Siehe: 488* dicofol											
1397	1,1,1-Trichlor-2,2-bis (4-chlorphenyl)ethan *Siehe: 394* DDT (nicht als ISO-Kurzname anerkannt)											
1398	1,1,1-Trichlor-2,2-bis-(4-fluor-phenyl)-ethan *Siehe: 405* DFDT											
1399	2,3,4-Trichlorbuten-1 *Anm. K*	*2431-50-7*				II						
1400	Trichloressigsäure	607-004-00-7 *76-03-9*	C	35	24/25-26	I 2.2 I 2.3 I 2.4			>5	1-5		C,Xi

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1401	1,1,1-Trichlorethan *Vgl. 1012* Methylchloroform	602-013-00-2 *71-55-6*	Xn	20/22	2-25	I 2.1		IIc				
1402	1,1,2-Trichlorethan	602-014-00-8 *79-00-5*	Xn	20/21/22	9	I 2.1		IIa			ja	Xn
1403	*Trichlorethen* *Vgl. 1404* Trichlorethylen	602-027-00-9 *79-01-6*	Xn	20/22	2-25	I 2.1		IIb				
1404	Trichlorethylen *Siehe: 1403* Trichlorethen											
1405	1,2-O-(R)-(2,2,2-Trichlor-ethyliden)-glucofuranose *Siehe: 265* Chloralose (INN-Name)											
1406	(2,2,2-Trichlor-1-hydroxy-ethyl)-O,O-dimethylphosphonat *Siehe: 1417* trichlorphon											
1407	Trichlorisocyanursäure *Vgl. 1422* 1,3,5-Trichlor-1,3,5-triazin-2,4,6-trion	613-031-00-5 *87-90-1*	O,Xn	8-22-31-36/37	8-26-41							
1408	Trichlormethan *Vgl. 309* Chloroform	602-006-00-4 *67-66-3*	Xn	20	2-24/25	I 2.1		IIa				

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1409	Trichlor-nitro-methan *Vgl. 322* Chlorpikrin	610-001-00-3 *76-06-2*	T	26/27/28- 36/37/38	26-36-45	I 2.3 I 2.4					ja	T,Xn
1410	trichloronat *Vgl. 759* Ethyl-O-ethyl-O-2,4,5-trichlor-phenyl-thiophosphonat	015-098-00-0 *327-98-0*	T	26/27/28	1-13-45	I 2.3 I 2.4	Ia				ja	T,Xn
1411	2,4,5-Trichlorphenol *(1)* 2,4,6-Trichlorphenol *(2)*	604-012-00-2 *95-95-4 (1)* *88-06-2 (2)*	Xn	22-36/38	26-28	I 2.2		≥ 5				
1412	(2,4,5-Trichlor-phenoxy)-essigsäure *Siehe: 1328* 2,4,5-T											
1413	[2-(2,4,5-Trichlor-phenoxy)-ethyl]-2,2-dichlor-propionat *Siehe: 698* erbon											
1414	2-(2,4,5-Trichlor-phenoxy)-propionsäure *Siehe: 789* fenoprop											
1415	2,3,6-Trichlor-phenyl-essigsäure *Siehe: 286* chlorfenac											
1416	O-(2,4,5-Trichlor-phenyl)-O,O-dimethyl-thiophosphat *Siehe: 787* fenchlorphos											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi			
1	2	3	4	5	6	7	8					9	10
1417	trichlorphon *Vgl. 1408* (2,2,2-Trichlor-1-hydroxy-ethyl)-O,O-dimethyl-phosphonat	015-021-00-0 *52-68-6*	Xn	20/21/22	2-13	1 2.3 1 2.4		IIb				ja	Xn
1418	1,2,3-Trichlorpropan *Anm. D*	602-062-00-X *96-18-4*	Xn	20/21/22	37/39								
1419	Trichlorsilan *Vgl. 1311* Siliciumchloroform	014-001-00-9 *10025-78-2*	F	15-17	24/25-43								
1420	alpha,alpha,alpha-Trichlor-toluol	602-038-00-9 *98-07-7*	Xn	20	24/25								
1421	2,4,6-Trichlor-1,3,5-triazin *Vgl. 369* Cyanurylchlorid	613-009-00-5 *108-77-0*	Xi	36/37/38	28								
1422	1,3,5-Trichlor-1,3,5-triazin-2,4,6-trion *Siehe: 1407* Trichlorisocyanursäure												
1423	Tricyclohexylzinn-Verbindungen, soweit nicht aufgeführt *Anm. A*	050-012-00-5	Xn	20/21/22	26-28	1 2.2 1 2.3		≥ 1				ja ja	Xn Xn
1424	tridemorph *Vgl. 623* 2,6-Dimethyl-4-tridecyl-morpholin	613-020-00-5 *81412-43-3*	Xn	20/21/22	2-13	1 2.3 1 2.4		IIc				ja	Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen						
							Kennz.-Grenzen in % bzw. Klasse					
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
1425	2,4,6-Tri-(dimethylamino-methyl)phenol	603-069-00-0 *90-72-2*	Xn	22-36/38	26-28							
1426	Triethylamin	612-004-00-5 *121-44-8*	F,Xi	11-36/37	16-26-29							
1427	Triethylenglykoldi-acrylat *Anm. D*	607-126-00-0 *1680-21-3*	Xi	36/38-43	26-28	I 2.2				≥ 1		
1428	Triethylentetramin *Siehe: 420* 3,6-Diazaoctan-1,8-diamin											
1429	Triethylphosphat	015-013-00-7 *78-40-0*	Xn	22	25							
1430	Triethylzinn-Verbindungen, soweit nicht aufgeführt *Anm. A*	050-006-00-2	T	26/27/28	26-27-28-45	I 2.2 I 2.4	> 0,1	0,05-0,1			ja ja	T,Xn T,Xn
1431	trifenmorph	*1420-06-0*				I 2.3		IId				
1432	Trifluoressigsäure, 2-10% *Anm. B*	607-091-01-9 *76-05-1*	Xi	36/37/38	23-26							
1433	Trifluoressigsäure, > 10% *Anm. B*	607-091-00-1 *76-05-1*	C	20-35	9-26-27-28	I 2.2			> 10	2-10		
1434	alpha,alpha,alpha-Tri-fluor-toluol	602-056-00-7 *98-08-8*	F	11	16-23							
1435	*Trihexyl-zinnhydroxid* *Siehe: 386* cyhexatin											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1436	Trihexylzinn-Verbindungen, soweit nicht aufgeführt *Anm. A*	050-010-00-4	Xn	20/21/22	26-28	I 2.2		≥ 1			ja	Xn
1437	1,2,3-Trihydroxybenzol *Vgl. 1277* Pyrogallol	604-009-00-6 *87-66-1*	Xn	20/21/22		I 2.2		≥ 10			ja	Xn
1438	1,1,1-Trihydroxymethyl-propyltriacrylat *Anm. D* *Vgl. 1448* Trimethylolpropantri-acrylat	607-111-00-9 *15625-89-5*	Xi	36/38-43	39	I 2.2				≥ 1		
1439	Trikresylphosphat (o-o-o,o-o-m,o-o-p,o-m-m, o-m-p,o-p-p) *Anm. C*	015-015-00-8 *1330-78-5*	T	23/24/25-39	20/21-28-44						ja	T
1440	Trikresylphosphat (m-m-m,m-m-p,m-p-p,p-p-p) *Anm. C*	015-016-00-3	Xn	21/22	28							
1441	Trikresylphosphate (Mischungen mit mehr als 1% verestertem Ortho-kresol)	015-017-00-9	T	23/24/25-39	20/21-28-44	I 2.2 I 2.4	> 1	0,2-1			ja ja	T,Xn T,Xn
1442	Trikresylphosphate (Mischungen mit höchstens 1% verestertem Ortho-kresol)	015-018-00-4	Xn	21/22	28	I 2.2		≥ 5			ja	Xn
1443	Trimellitsäureanhydrid *Vgl. 125* 1,2,4-Benzoltricarbonsäureanhydrid	607-097-00-4 *552-30-7*	Xi	36/37/38-42	22-28	I 2.2				≥ 0,3		

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1444	1,3,5-Trimethylbenzol *Siehe: 971* Mesitylen											
1445	3,5,5-Trimethyl-2-cyclohexen-(1)-on *Vgl. 890* Isophoron	606-012-00-8 *78-59-1*	Xi	36/37/38	26	I 2.1				≥ 25		
1446	2,2,4-Trimethylhexamethylen-1,6-diisocyanat *(1)* 2,4,4-Trimethylhexamethylen-1,6-diisocyanat *(2)* Mischung von *(1)* und *(2)* *Anm. C*	615-010-00-6 *16938-22-0(1)* *15646-96-5(2)*	T	23-36/37/38-42	26-28-38-45	I 2.2	> 2	0,5-2			ja	T,Xn
1447	1,3a,8-Trimethyl-5-methylcarbamoyloxy-1,2,3,3a,8,8a-hexahydropiziolo[2,3-b]indol *Siehe: 703* Eserin											
1448	Trimethylolpropantriacrylat *Siehe: 1438* 1,1,1-Trihydroxymethylpropyltriacrylat											
1449	2,4,4-Trimethyl-1-penten	601-031-00-8 *107-39-1*	F	11	9-16-29-33							
1450	2,4,6-Trimethyl-1,3,5-trioxan *Vgl. 1157* Paraldehyd	605-004-00-1 *123-63-7*	F	11	9-16-29-33							

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1451	Trimethylzinn-Verbindungen, soweit nicht aufgeführt *Anm. A*	050-005-00-7	T	26/27/28	26-27-28-45	I 2.2 I 2.4	> 0,1	0,05-0,1			ja ja	T,Xn T,Xn
1452	Trioctylzinn-Verbindungen, soweit nicht aufgeführt *Anm. A*	050-013-00-0	Xi	36/37/38		I 2.2				≥ 1		
1453	1,3,5-Trioxan *Vgl. 1454* Trioxymethylen	605-002-00-0 *110-88-3*	Xn	22	24/25							
1454	Trioxymethylen *Siehe: 1453* 1,3,5-Trioxan											
1455	Tripentylzinn-Verbindungen, soweit nicht aufgeführt *Anm. A*	050-009-00-9	Xn	20/21/22	26-28	I 2.2		≥ 1			ja	Xn
1456	Triphenylphosphit	015-105-00-7 *101-02-0*	Xi	36/38	28	I 2.2				≥ 5		
1457	Triphenyl-zinnacetat *Siehe 794* fentin-acetat											
1458	Triphenyl-zinnchlorid *Siehe 795* fentin-chlorid											
1459	Triphenyl-zinnhydroxid *Siehe 796* fentin-hydroxid											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	*Xn* bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1460	Triphenylzinn-Verbindungen, soweit nicht aufgeführt *Anm. A*	050-011-00-X	T	23/24/25	26-27-28-44	I 2.2	> 1	0,25-1			ja	T,Xn
1461	Tripropylzinn-Verbindungen, soweit nicht aufgeführt *Anm. A*	050-007-00-8	T	23/24/25	26-27-28-44	I 2.2 I 2.4	> 0,5	0,1-0,5			ja ja	T,Xn T,Xn
1462	Tris (2-chlorethyl)-phosphat	015-102-00-0 *115-96-8*	Xn	22-36/38		I 2.2		≥ 25				
1463	L-Tropyl-tropat *Siehe: 875* Hyoscyamin											
1464	DL-Tropyl-tropat *Siehe: 92* Atropin											
1465	Uran	092-001-00-8 *7440-61-1*	T	26/28-33	20/21-45						ja	T
1466	Uranverbindungen *Anm. A*	092-002-00-3	T	26/28-33	20/21-45	I 2.4					ja	T,Xn
1467	Urethan *Siehe: 740* Ethylcarbamat											
1468	vamidothion *Vgl. 602* O,O-Dimethyl-S-5-(N-*methyl-2-methyl-3-thia*-valeramid)-thiophosphat	015-059-00-8 *2275-23-2*	T	23/24/25	2-13-44	I 2.3 I 2.4	Ic				ja	T,Xn

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1469	Vanadiumpentoxid	023-001-00-8 *1314-62-1*	Xn	20	22							
1470	Vinylacetat *Anm. D*	607-023-00-0 *108-05-4*	F	11	16-23-29-33							
1471	Vinylbromid *Siehe: 179* Bromethen											
1472	Vinylchlorid *Anm. D,K*	602-023-00-7 *75-01-4*	F,T	13-45	9-16-33	I 2.4 II					ja	T,Xn
1473	Vinylcyclohexandiepoxid *Siehe: 688* 1-Epoxyethyl-3,4-epoxy-cyclohexan											
1474	2-Vinyl-toluol *Siehe: 1054* o-Methylstyrol											
1475	warfarin *Vgl. 870* 4-Hydroxy-3-[3-oxo-1-phenyl]-butyl-cumarin	607-056-00-0 *81-81-2*	T	28/27/28	1-13-44	I 2.3 I 2.4	Ia				ja	T,Xn
1476	Wasserstoff	001-001-00-9 *1333-74-0*	F	12	7/9							
1477	Wasserstoffperoxid-lösung, >60% *Anm. B*	008-003-00-9 *7722-84-1*	O,C	8-34	3-28-36/39							
1478	Wasserstoffperoxid-lösung, 20-60% *Anm. B*	008-003-01-6	C	34	28-39							

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
Lfd. Nr	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkundenachweis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
1479	Xylenol *Anm. C*	604-008-00-X *1300-71-6* *(MIX)*	T	24/25-34	2-28-44						ja	T
1480	Xylidin *Anm. C*	612-027-00-0 *1300-73-8*	T	23/24/25-33	28-36/37-44						ja	T
1481	Xylol *Anm. C*	601-022-00-9 *95-47-6 (o)* *108-38-3 (m)* *106-42-3 (p)*	Xn	10-20	24/25	I 2.1		IIc				
1482	Zinkalkyle; C1 bis C5 Kettenlänge *Anm. A*	030-004-00-8	F,C	14-17-34	16-43							
1483	Zink-bis(N,N-dimethyl-dithiocarbamat) *Siehe: 1490* ziram											
1484	Zinkchlorid	030-003-00-2 *7646-85-7*	C	34	7/8-28							
1485	Zinkchromate (einschließlich Zinkkaliumchromat) *Anm. A,E*	024-007-00-3	T	45-22-43	53-44	II					ja	T
1486	Zinkphosphid	015-006-00-9 *1314-84-7*	T	28-32	1/2-20/21-22-28-45	I 2.3 I 2.4		Ia			ja ja	T,Xn T,Xn
1487	Zinkpulver-Zinkstaub (nicht stabilisiert)	030-001-00-1 *7440-66-6*	F	15-17	7/8-43							
1488	Zinkpulver-Zinkstaub (stabilisiert)	030-002-00-7		10-15	7/8-43							

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1488	Zinntetrachlorid	050-001-00-5 *7646-78-8*	C	34-37	7/8-26							
1490	ziram *Vgl. 1483* Zink-bis(N,N-dimethyl-dithiocarbamat)	006-012-00-2 *137-30-4*	Xn	22-38	2-13	I 2.3 I 2.4		IId			ja	Xn
1491	Zirkoniumpulver (nicht stabilisiert)	040-001-00-3 *7440-67-7*	F	15-17	7/8-43							
1492	Zirkoniumpulver (stabilisiert)	040-002-00-9 *7440-67-7*		15	7/8-43							
1493	Acetessigsäuremethylester *Siehe: 1553* Methylacetoacetat											
1494	Adipinsäure	607-144-00-9 *124-04-9*	Xi	36	—							
1495	Salze von 4-Aminobiphenyl *Anm. A,E*	612-073-00-1	T	45-22	53-44	II					ja	T
1496	4-Amino-N,N-diethylanilin *Vgl. 1528* N,N-Diethyl-p-phenylendiamin	612-080-00-X *93-05-0*	T	25-34	26-36-44						ja	T
1497	2-Aminoethyldimethylamin *Vgl. 1534* 2-Dimethylaminoethylamin	612-075-00-2 *108-00-9*	F,C	11-21/22-35	16-23-26-28-36							

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
Lfd. Nr.	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
1498	1-Aminopropan-2-ol *Vgl. 1548* Isopropanolamin	603-082-00-1 *78-96-6*	C	34	23-26-36							
1499	Ammoniumchlorid	017-014-00-8 *12125-02-9*	Xn	22-36	22							
1500	Arsentrioxid *Siehe: 1523* Diarsentrioxid											
1501	Benzoguanamin *Siehe: 1568* 6-Phenyl-1,3,5-triazin-2,4-diamin											
1502	Benzonitril	608-012-00-3 *100-47-0*	Xn	21/22	23							
1503	Benzyldimethylamin	612-074-00-7 *103-83-3*	C	10-20/21/22-34	26-36							
1504	Bleichromat	082-004-00-2 *7758-97-6*	Xn	33-40	22							
1505	Brenzcatechin *Siehe: 1529* 1,2-Dihydroxybenzol											
1506	2-Butanonoxim *Vgl. 1540* Ethylmethylketoxim	616-014-00-0 *96-29-7*	Xi	36-43	23-24							
1507	But-2-in-1,4-diol *Vgl. 1508* 2-Butin-1,4-diol	603-076-00-9 *110-65-6*	T	25-34	22-36-44						ja	T
1508	2-Butin-1,4-diol *Siehe: 1507* But-2-in-1,4-diol											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1509	Buttersäure	607-135-00-X *107-92-6*	C	34	26-36							
1510	Butylchlorformiat *Vgl. 1514* Chlorameisensäurebutylester	607-138-00-6 *592-34-7*	T	10-23-34	26-36-44						ja	T
1511	Butyraldehydoxim	616-013-00-5 *110-69-0*	T	22-24-36	23-36-44						ja	T
1512	Butyrylchlorid	607-136-00-5 *141-75-3*	F,C	11-34	16-23-26-36							
1513	Calciumchlorid	017-013-00-2 *10043-52-4* *22691-02-7*	Xi	36	22-24							
1514	Chlorameisensäurebutylester *Siehe: 1510* Buthylchlorformiat											
1515	Chlorameisensäurepropylester *Siehe: 1574* n-Propylchlorformiat											
1516	2-Chlorbenzonitril	608-013-00-9 *873-32-5*	Xn	21/22-36	23							
1517	Chlordimeformhydrochlorid *Vgl. 1521* N-(4-Chlor-o-tolyl)-N',N'-dimethylformamidinhydrochlorid	650-009-00-4 *19750-95-9*	Xn	22-40	22-36/37							
1518	Chlordimethylether *Siehe: 1519* Chlormethyl-methylether											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennzeichen für R-Sätze	Kennzeichen für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1519	Chlormethyl-methylether *Anm. E* *Vgl. 1518* Chlordimethylether	603-075-00-3 *107-30-2*	F,T	45-11-20/21/22	53-9-16-44	II					ja	T
1520	2-Chlorpropionsäure	607-139-00-1 *598-78-7*	C	22-35	23-26-28-36							
1521	N-(4-Chlor-o-tolyl)-N',N'-dimethylformamidinhydrochlorid *Siehe: 1517* Chlordimeformhydrochlorid											
1522	4,4'-Diaminobiphenyl *Siehe: 120* Benzidin											
1523	Diarsentrioxid *Anm. E* *Vgl. 1500* Arsentrioxid	033-003-00-0 *1327-53-3*	T+	45-28-34	53-45	I 2.2 I 2.3 I 2.4 II	>0,2	0,1-0,2			ja ja ja	T,Xn T,Xn T,Xn
1524	Salze von 3,3'-Dichlorbenzidin *Anm. A,E*	612-069-00-X	T	45-21-43	53-44	II					ja	T
1525	2,2'-Dichlor-4,4'-methylendianilin *Anm. E* *Vgl. 1018* 4,4'-Methylen-bis(2-chloranilin)	612-078-00-9 *101-14-4*	T	45-22	53-44	II					ja	T
1526	Salze von 2,2'-Dichlor-4,4'-methylendianilin *Anm. A,E* *Vgl. 1557* Salze von 4,4'-Methylen-bis(2-chloranilin)	612-079-00-4	T	45-22	53-44	II					ja	T
1527	Diethyloxalat *Vgl. 1566* Oxalsäurediethylester	607-147-00-5 *95-92-1*	Xn	22-36	23							

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1528	N,N-Diethyl-p-phenylendiamin *Siehe: 1496* 4-Amino-N,N-diethylanilin											
1529	1,2-Dihydroxybenzol *Vgl. 1505* Brenzcatechin	604-016-00-4 *120-80-9*	Xn	21/22-36/38	22-26-37							
1530	Diisopropanolamin *Siehe: 1546* 1,1'-Iminodipropan-2-ol											
1531	Dikupferoxid *Vgl. 1551* Kupfer(I)-oxid	*029-002-00-X* *1317-39-1*	Xn	22	22							
1532	Dimepranol (INN) *Siehe: 1535* 1-Dimethylaminopropan-2-ol											
1533	Salze von 3,3'-Dimethoxybenzidin *Anm. A,E* *Vgl. 419* Salze von o-Dianisidin	612-037-00-5	T	45-22	53-44	II					ja	T
1534	2-Dimethylaminoethylamin *Siehe: 1497* 2-Aminoethyldimethylamin											
1535	1-Dimethylaminopropan-2-ol *Vgl. 1532* Dimepranol (INN)	603-077-00-4 *108-16-7*	C	10-22-34	23-26-36							
1536	Salze von 3,3'-Dimethyl-benzidin *Anm. A,E* *Vgl. 1560* Salze von o-Tolidin	612-081-00-5	T	45-22	53-44	II					ja	T

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1537	1,2-Dimethylimidazol	613-034-00-1 *1739-84-0*	Xn	22-38-41	24-26							
1538	Ethylendibromid *Siehe: 425* 1,2-Dibromethan											
1539	Ethyldimethylamin	612-076-00-8 *598-56-1*	F+,C	12-20/22-34	3-16-26-36							
1540	Ethylmethylketoxim *Siehe: 1506* 2-Butanonoxim											
1541	Formaldehyd 1%≤c<5% *Anm. B*	605-001-02-X *50-00-0*	Xn	40-43	23-37							
1542	Fumarsäure	607-146-00-X *110-17-8*	Xi	36	26							
1543	Guanidinhydrochlorid *Siehe: 1544* Guanidiniumchlorid											
1544	Guanidiniumchlorid *Vgl. 1543* Guanidinhydrochlorid	607-148-00-0 *50-01-1*	Xn	22-36/38	22							
1545	1,4,5,6,7,8,8-Heptachlor-2,3-epoxy-3a,4,7,7a-tetrahydro-4,7-methanoindan *Siehe: 826* Heptachlorepoxid											
1546	1,1'-Iminodipropan-2-ol *Vgl. 1530* Diisopropanolamin	603-083-00-7 *110-97-4*	Xi	36	26							
1547	Isobutyrylchlorid	607-140-00-7 *79-30-1*	F,C	11-35	16-23-26-36							

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen							
							Kennz.-Grenzen in % bzw. Klasse						
Lfd. Nr.	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
1548	Isopropanolamin *Siehe: 1498* 1-Aminopropan-2-ol											
1549	Kupfer(I)-chlorid	029-001-00-4 *7758-89-6*	Xn	22	22							
1550	Kupfernaphthenat	029-003-00-5 *1338-02-9*	Xn	10-22	---							
1551	Kupfer(I)-oxid *Siehe: 1531* Dikupferoxid											
1552	Methansulfonsäure	607-145-00-4 *75-75-2*	C	34	26-36							
1553	Methylacetoacetat *Vgl. 1493* Acetessigsäuremethylester	607-137-00-0 *105-45-3*	Xi	36	*26*							
1554	2-Methylamino-ethanol *Vgl. 1558* N-Methylethanolamin	603-080-00-0 *109-83-1*	C	34	23-26-36							
1555	2-Methylaziridin *Anm. E* *Vgl. 1260* Propylenimin	613-033-00-6 *75-55-8*	F,T+	45-11- 26/27/28-41	53-26-45	II					ja	T
1556	N-Methyldiethanolamin *Siehe: 1560* 2,2'-Methyliminodiethanol											
1557	Salze von 4,4'-Methylen-bis(2-chloranilin) *Siehe: 1526* Salze von 2,2'-Dichlor-4,4'-methylendianilin											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1558	N-Methylethanolamin *Siehe: 1554* 2-Methylamino-ethanol											
1559	1-Methylimidazol	613-035-00-7 *616-47-7*	C	21/22-34	26-36							
1560	2,2'-Methyliminodiethanol *Vgl. 1556* N-Methyldiethanolamin	603-079-00-5 *105-59-9*	Xi	36	24							
1561	2-Methylpyridin *Vgl. 1569* 2-Picolin	613-036-00-2 *109-06-8*	Xn	10-20/21/22-36/37	26-36							
1562	4-Methylpyridin *Vgl. 1570* 4-Picolin	613-037-00-8 *108-89-4*	T	10-20/22-24-36/37/38	26-36-44						ja	T
1563	Salze von 2-Naphthylamin *Anm. A,E*	612-071-00-0	T	45-22	53-44	II					ja	T
1564	Natriumcarbonat	011-005-00-2 *497-19-8* *24551-51-7*	Xi	36	22-26							
1565	N-Nitrosodimethylamin *Siehe: 610* Dimethylnitrosamin											
1566	Oxalsäurediethylester *Siehe: 1527* Diethyloxalat											
1567	Oxydiethylenbis(chlorformiat)	607-141-00-2 *106-75-2*	Xn	22-36-41	23-26							

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr	Bezeichnung	EG-Nummer CAS-Nummer	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1568	6-Phenyl-1,3,5-triazin-2,4-diamin *Vgl. 1501* Benzoguanamin	613-038-00-3 *91-76-9*	Xn	22	—							
1569	2-Picolin *Siehe: 1561* 2-Methylpyridin											
1570	4-Picolin *Siehe: 1562* 4-Methylpyridin											
1571	3-Propanolid *Anm. E* *Vgl. 1247* 1,3-Propiolacton	606-031-00-1 *57-57-8*	T+	45-26-36/38	53-45	II					ja	T+
1572	Propargylalkohol *Siehe: 1573* Prop-2-in-1-ol											
1573	Prop-2-in-1-ol *Vgl. 1572* Propargylalkohol	603-078-00-X *107-19-7*	T	10-23/24/25-34	26-28-36-44						ja	T
1574	n-Propylchlorformiat *Vgl. 1515* Chlorameisensäurepropylester	607-142-00-8 *109-61-5*	T	10-23-34	26-36-44						ja	T
1575	Thiocarbamid *Siehe: 1578* Thioharnstoff											
1576	2,2'-Thiodiethanol *Vgl. 1577* Thiodiglykol	603-081-00-6 *111-48-8*	Xi	36	—							
1577	Thiodiglykol *Siehe: 1576* 2,2'-Thiodiethanol											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1578	Thioharnstoff *Vgl. 1575* Thiocarbamid	612-082-00-0 *62-56-6*	Xn	22-40	22-24							
1579	o-Tolidin *Siehe: 570* 3,3'-Dimethyl-benzidin											
1580	Salze von o-Tolidin *Siehe: 1536* Salze von 3,3'-Dimethyl-benzidin											
1581	Trialkylborane *Anm. A*	005-004-00-6	F,C	17-34	7-23-26-36-43							
1582	1,2,4-Triazol-3-ylamin *Siehe: 63* Amitrol (ISO)											
1583	Trimethylborat	005-005-00-1 *121-43-7*	Xn	10-21	23-25							
1584	Valeriansäure	607-143-00-3 *109-52-4*	C	34	26-36							

Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse				Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
							T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1608	Methylazoxymethylacetat *Siehe: 1610* (Methyl-ONN-azoxy)-methylacetat											
1609	1-Methyl-3-nitro-1-nitroso-guanidin *Anm. E*	612-083-00-6 *70-25-7*	T	45-20-36/38	53-44						ja	T
1610	(Methyl-ONN-azoxy)-methylacetat *Vgl. 1608* Methylazoxymethylacetat	611-004-00-2 *592-62-1*	T	45-47	53-44						ja	T
1611	Methyloxiran *Siehe: 690* 1,2-Epoxypropan											
1612	Phenyloxiran *Siehe: 1613* Styroloxid											
1613	Styroloxid *Anm. E* *Vgl. 1603* (Epoxyethyl)benzol *Vgl. 1612* Phenyloxiran	603-084-00-2 *96-09-3*	T	45-21-36	53-44						ja	T
1614	Toxaphen *Siehe: 252* Camphechlor (ISO)											
1615	Xylol, Isomerengemisch (wenn Flammpunkt ≥ 21 °C)	601-022-01-6 *1330-20-7*	Xn	10-20/21-38	25	I 2.1		IIc				
1616	m-Xylol	601-039-00-1 *108-38-3*	Xn	10-20/21-38	25							
1617	o-Xylol	601-038-00-6 *95-47-6*	F,Xn	11-20/21-38	16-25-29							
1618	p-Xylol	601-040-00-7 *106-42-3*	Xn	10-20/21-38	25							

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
							Kennz.-Grenzen in % bzw. Klasse					
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1597	3-(4-Chlorphenyl)-1,1-dimethylharnstoff *Siehe: 1074* Monuron (ISO)											
1598	Chrom(III)-Salz der Chrom(IV)-Säure *Siehe: 336* Chrom(III)-chromat											
1599	Dapson *Vgl. 1600* 4,4'-Diaminodiphenylsulfon	612-084-00-1 *80-08-0*	Xn	22	22							
1600	4,4'-Diaminodiphenylsulfon *Siehe: 1599* Dapson											
1601	1-[(2-(2,4-Dichlorophenyl)-1,3-dioxolan-2-yl)methyl]-1H-1,2,4-triazol *Siehe: 1588* Azaconazol (ISO)											
1602	1,3-Dichlor-2-propanol *Anm. E*	602-064-00-0 *96-23-1*	T	45-21-25	53-44						ja	T
1603	(Epoxyethyl)benzol *Siehe: 1613* Styroloxid											
1604	Ethanal *Siehe: 3* Acetaldehyd											
1605	Ethylenthioharnstoff *Anm. E* *Vgl. 1607* Imidazolidin-2-thion	613-039-00-9 *96-45-7*	Xn	47-22	53							
1606	n-Hexan	601-037-00-0 *110-54-3*	F,Xn	11-20-48	9-16-24/25-29-51	I 2.1		IIa			ja	Xn
1607	Imidazolidin-2-thion *Siehe: 1605* Ethylenthioharnstoff											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
1587	Aromatenextrakte aus Erdöldestillaten (definiert durch die EINECS Nr 2651021, 2651037, 2651042, 2651110)	650-011-00-5 *64742-03-6* *64742-04-7* *64742-05-8* *64742-11-6*	T	45	53-44						ja	T
1588	Azaconazol (ISO) *Vgl. 1601* 1-[(2-(2,4-Dichlorophenyl)-1,3-dioxolan-2-yl)methyl]-1H-1,2,4-triazol	613-040-00-4 *60207-31-0*	Xn	22-44	24							
1589	Benzo(e)acephenanthrylen *Siehe: 1592* Benzo(b)fluoranthen											
1590	Benzo(a)anthracen	601-033-00-9 *56-55-3*	T	45	53-44						ja	T
1591	Benzo(d,e,f)chrysen *Siehe: 127* Benzo(a)pyren											
1592	Benzo(b)fluoranthen *Vgl. 1589* Benzo(e)acephenanthrylen	601-034-00-4 *205-99-2*	T	45	53-44						ja	T
1593	Benzo(j)fluoranthen	601-035-00-X *205-82-3*	T	45	53-44						ja	T
1594	Benzo(k)fluoranthen	601-036-00-5 *207-08-9*	T	45	53-44						ja	T
1595	Benzyl violet 4 B *Vgl. 1586* alpha-[4-(4-Dimethylamino-alpha-{4-[ethyl-(3-natriosulfonatobenzyl)amino]=phenyl}benzyliden)cyclohexa-2,5-dienyliden-(ethyl)ammonio]toluol-3-sulfonat	650-010-00-X *1694-09-3*	Xn	40	36/37							
1596	Chlorethylen *Siehe: 1472* Vinylchlorid											

Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennzeichnung Gefährlichkeitsmerkmale: Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennzeichnung Zubereitungen: Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
1376	Toluol	601-021-00-3 *108-88-3*	F,Xn	11-20	16-25-29-33	I 2.1		IIc				
1389	Tributylzinnaphthenat	050-016-00-7 *85409-17-2*	Xn	*20/21/22*	26-28	I 2.2 I 2.3 I 2.4		≥2			ja ja	Xn Xn
1401	1,1,1-Trichlorethan *Anm. F* *Vgl. 1012* Methylchloroform	602-013-00-2 *71-55-6*	Xn	20	24/25	I 2.1		IIc				
1404	Trichlorethylen	602-027-00-9 *79-01-6*	Xn	40	23-36/37	I 2.1		IIb				
1408	Trichlormethan *Vgl. 309* Chloroform	602-006-00-4 *67-66-3*	Xn	20/22-38-40-48	36/37	I 2.1		IIa				
1472	Vinylchlorid *Anm. D* *Vgl. 1596* Chlorethylen	602-023-00-7 *75-01-4*	F,T	45-13	53-9-16-44	I 2.4 II					ja	T,Xn
1481	Xylol Isomerengemisch (wenn Flammpunkt < 21 °C)	601-022-00-9 *1330-20-7*	F,Xn	11-20/21-38	16-25-29	I 2.1		IIc				
1541	Formaldehyd 1% ≤ c < 5% *Anm. B*	605-001-02-X *50-00-0*	Xn	40-43	23-37	I 2.2		1-5				

cc) Die in der folgenden Liste aufgeführten laufenden Nummern 1585 bis 1618 werden mit den zugehörigen Angaben angefügt:

1585	Ammoniumperchlorat	017-009-00-0 *7790-98-9*	O	9-44	14-16-27-36/37							
1586	alpha-[4-(4-Dimethylamino-alpha-(4-[ethyl-(3-natriosulfonatobenzyl)amino]=phenyl)benzyliden)cyclohexa-2,5-dienyliden-(ethyl)ammonio]toluol-3-sulfonat *Siehe: 1595* Benzyl violet 4 B											

Stoffidentität			Kennzeichnung Stoff			Kennzeichnung Zubereitungen					Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
Lfd. Nr.	Bezeichnung	EG-Nummer *CAS-Nummer*	Kennb. Gef.-Symbol	Kennziffer für R-Sätze	Kennziffer für S-Sätze	Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi		
1	2	3	4	5	6	7	8				9	10
757	Ethylenoxid *Anm. E* *Vgl. 1152* Oxiran	603-023-00-X *75-21-8*	F+,T	45-46-13- 23-36/37/38	53-3/7/9- 16-33-44	I 2.3 I 2.4 II	Ia				ja ja	T,Xn T,Xn
806	Formaldehyd 5% ≤ c < 25% *Anm. B*	605-001-01-2 *50-00-0*	Xn	20/21/22- 36/37/38- 40-43	26-36/37-51	I 2.2 I 2.4		5-25			ja ja	Xn Xn
807	Formaldehyd, c ≥ 25% *Anm. B,D*	605-001-00-5 *50-00-0*	T	23/24/25- 34-40-43	26-36/37- 44-51	I 2.2 I 2.4	≥25				ja ja	T T
852	Hexan, Isomerengemisch (mit mehr als 5% n-Hexan)	601-007-01-4	F,Xn	11-20-48	9-16-24/25- 29-51	I 2.1		IIa			ja	Xn
855	2-Hexanon *Vgl. 1007* Methyl-n-butylketon	606-030-00-6 *591-78-6*	F,T	11-23-48	9-16-29- 44-51	I 2.1	Ic				ja	T,Xn
1007	Methyl-n-butylketon *Siehe: 855* 2-Hexanon											
1074	Monuron (ISO) *Vgl. 1597* 3-(4-Chlorphenyl)-1,1-dimethylharnstoff	006-042-00-6 *150-68-5*	Xn	22-40	36/37	I 2.3		IId				
1319	Styrol *Anm. D*	601-026-00-0 *100-42-5*	Xn	10-20-36/38	23	I 2.1				≥25		
1320	Sulfallat (ISO) *Anm. E* *Vgl. 264* 2-Chlorallyl-N,N-diethyldithiocarbamat	006-038-00-4 *95-06-7*	T	45-22	53-44	I 2.3 I 2.4		IIc			ja	T
1339	Tetrachlorethylen *Vgl. 1176* Perchlorethylen	602-028-00-4 *127-18-4*	Xn	40	23-36/37	I 2.1		IIb				
1359	Tetraphosphor *Vgl. 1208* Phosphor, weißer oder gelber	015-001-00-1 *7723-14-0*	F,T	17-26/28-35	5-26-28-45	I 2.3 I 2.4					ja ja	Xn Xn

Lfd. Nr.	Stoffidentität: Bezeichnung	Stoffidentität: EG-Nummer *CAS-Nummer*	Kennzeichnung Stoff: Kennb. Gef.-Symbol	Kennzeichnung Stoff: Kennziffer für R-Sätze	Kennzeichnung Stoff: Kennziffer für S-Sätze	Kennzeichnung Zubereitungen: Kennz. nach Anhang	Kennz.-Grenzen in % bzw. Klasse: T bzw. Klasse	Xn bzw. Klasse	C	Xi	Sachkenntnis nach § 12 Abs. 2	Aufbewahrung nach § 24
1	2	3	4	5	6	7	8				9	10
3	Acetaldehyd *Vgl. 1604* Ethanal	605-003-00-6 *75-07-0*	F+,Xn	12-36/37-40	16-33-36/37							
127	Benzo(a)pyren *Vgl. 1591* Benzo(d,e,f)chrysen	601-032-00-3 *50-32-8*	T	45-46-47	53-44	II					ja	T
202	Butanon *Vgl. 770* Ethylmethylketon	606-002-00-3 *78-93-3*	F,Xi	11-36/37	9-16-25-33							
252	Camphechlor (ISO); (67–69% Cl) *Vgl. 1614* Toxaphen	602-044-00-1 *8001-35-2*	T	21-25-37/38-40	36/37-44	I 2.3 I 2.4	Ic				ja	T,Xn
296	Chlormethan *Vgl. 1011* Methylchlorid	602-001-00-7 *74-87-3*	F,Xn	13-20-40-48	9-16-33							
336	Chrom(III)-chromat *Vgl. 1598* Chrom(III)-Salz der Chrom(VI)-Säure	024-010-00-X *24613-89-6*	O,T	45-8-35-43	53-44	II					ja	T
450	1,2-Dichlorethan *Anm. E* *Vgl. 753* Ethylenchlorid	602-012-00-7 *107-06-2*	F,T	45-11-22-36/37/38	53-16-29-44	I 2.1 I 2.3		IIa IIc			ja	T,Xn
530	Diethylsulfat *Anm. E*	016-027-00-6 *64-67-5*	T	45-46-20/21/22-34	53-26-44	II					ja	T
648	1,4-Dioxan	603-024-00-5 *123-91-1*	F,Xn	11-36/37-40	16-36/37	I 2.1		IIa			ja	Xn
690	1,2-Epoxypropan *Anm. E* *Vgl. 1261* 1,2-Propylenoxid *Vgl. 1611* Methyloxiran	603-055-00-4 *75-56-9*	F+,T	45-12-20/21/22-36/37/38	53-3/7/9-16-33-44	II					ja	T

Table 2-2

Charts Related to Incidents Ordinance (Stoerfall-V)

Chart I: Part One

This chart applies to the facilities listed in it even if they are operated as parts of facilities or auxiliary equipment of a facility that requires a permit but is not listed in it.

1. Facilities for the partial or complete disposal of solid or liquid waste by burning

2. Facilities for the thermal decomposition of flammable solid or liquid substances under conditions of oxygen deficiency (pyrolysis facilities)

3. Facilities for the chemical treatment of concentrates that contain cyanide, or for the treatment of nitrites, nitrates, or acids, if so treating them is intended to make possible reuse as a residual substance or disposal as waste; number 4 is unaffected

4. Facilities for the manufacture (as in a factory) of substances by chemical transformation

5. Facilities for extraction of asbestos

6. Facilites for the distillation or refining or other subsequent treatment of petroleum or petroleum products in refineries for petroleum, waste oil or waste lubricants, in petrochemical works, or for the extraction of paraffin

7. Facilities for the dry distillation of bituminous coal or ligneous coal

8. Facilites for the production of generator gas or water gas from solid combustibles

9. Facilities for the gasification or liquefaction of coal

10. Facilities for the production of city or grid gas from hydrocarbons by splitting

11. Facilities for the production, working, processing, reclamation, or destruction of substances that present dangers of explosion which are intended to be used as explosives, incendiary agents, propellants, pyrotechnic charges, or for the production of such. Facilities for loading, unloading, or defusing munitions or other explosives are included, but facilities for the production of matches are not

12. Facilities in which plant protectants or pesticides or their active ingredients are milled or mixed by machine or are unpacked or transferred.

Chart 1: Part Two

Facilities which are in the service of storing substances or preparations in the sense of number 9 of the appendix to the 4. BImSchV (Regulation on Facilities that Require a Permit) if they neither are parts of facilities or auxiliary equipment in a facility under Part One nor are in the service of steps in processes within such a facility

Chart II: List of Substances or Preparations Relevant to Facilities that Require Permits

Table 2-2 (continued)

Anhang II

Liste einzelner Stoffe oder Zubereitungen[1])
für genehmigungsbedürftige Anlagen außer Lägern nach Anhang I Teil 2

Nr.	Stoff	Mengenschwelle in kg Spalte 1	Spalte 2	UN-Nr.[2])	CAS-Nr.[3])
1	*Brennbare Gase*, das sind leicht entzündliche Stoffe oder Stoffgemische, die im gasförmigen Zustand bei Normaldruck in Mischung mit Luft einen Explosionsbereich haben und deren Siedebeginn bei Normaldruck bei 20 °C oder bei einer geringeren Temperatur liegt	50 000	200 000		
2	*Leicht entzündliche Flüssigkeiten*, das sind Stoffe oder Stoffgemische, die einen Flammpunkt unter 21 °C haben und deren Siedebeginn bei Normaldruck über 20 °C liegt, sofern die Temperatur im bestimmungsgemäßen Betrieb				
	— unterhalb des Siedebereichs liegt oder	2 000 000	2 000 000		
	— den Siedebereich erreicht oder überschreitet	*50 000*	*50 000*		
3	*Entzündliche Flüssigkeiten*, das sind Stoffe oder Stoffgemische, die einen Flammpunkt unter 55 °C haben und deren Siedebeginn bei Normaldruck über 20 °C liegt, sofern die Temperatur im bestimmungsgemäßen Betrieb oberhalb des Siedebeginns liegt und der Stoff durch erhöhten Druck im flüssigen Zustand gehalten wird	200 000	200 000		
4	*Explosionsgefährliche Stoffe* im Sinne des Sprengstoffgesetzes in der Fassung der Bekanntmachung vom 17. April 1986 (BGBl. I S. 577), soweit sie zur Verwendung als Sprengstoffe, Treibstoffe, Zündstoffe, pyrotechnische Sätze oder zu deren Herstellung bestimmt und den Lagergruppen 1.1 zugeordnet sind	10 000	10 000		

[1]) Entsprechend der Richtlinie 88/379/EWG des Rates vom 7. Juni 1988 zur Angleichung der Rechts- und Verwaltungsvorschriften der Mitgliedstaaten für die Einstufung, Verpackung und Kennzeichnung gefährlicher Zubereitungen (ABl. EG Nr. L 187 S. 14).

[2]) Identifikationsnummer der UNO-Liste für gefährliche Güter.

[3]) Identifikationsnummer eines Stoffes im Chemical Abstracts System.

Nr.	Stoff	Mengenschwelle in kg Spalte 1	Spalte 2	UN-Nr.[3])	CAS-Nr.[3])
4a	*Explosionsfähige Staub-/Luftgemische*[4]) (Aufwirbelungen feinteiliger, brennbarer Feststoffe mit Luft), für die nach VDI-RL 2263, Blatt 1 die Prüfung auf „Staubexplosionsfähigkeit" positiv ausfällt				
4b	Stoffe und Zubereitungen, die als „sehr giftig" [5]) eingestuft sind	20 000			
4c	Stoffe und Zubereitungen, die als „giftig"[6]) eingestuft sind	200 000			
5	Acetoncyanhydrin	100	1 000	1541	75-86-5
6	Acetylchlorid	50 000	500 000	1717	75-36-5
7	Acetylen, soweit in ungelöster Form im bestimmungsgemäßen Betrieb vorhanden	200	2 000	1001	74-86-2
8	Acrolein	10 000	100 000	1092	107-02-8
9	Acrylamid	1 000	10 000	2074	79-06-1
10	Acrylnitril	100	1 000	1093	107-13-1
	10.1 Acrylnitril bei Polymerisationsreaktionen bei Normaldruck und Temperaturen unter 77 °C	1 000	10 000		
11	Alanate				
	11.1 Lithiumaluminiumhydrid	100	1 000	1410	16853-85-3
	11.2 Natriumaluminiumhydrid	100	1 000		13770-96-2

[4]) Anstelle der Mengenschwellen in Spalte 1 und Spalte 2 wird folgendes festgelegt: Die Summe aller Teilvolumina einer Anlage, die der Zone 10 (gemäß den Richtlinien für die Vermeidung der Gefahren durch explosionsfähige Atmosphäre mit Beispielsammlung — Explosions-Richtlinien — (EX-RL), Ausgabe 9, 1990, herausgegeben von der Berufsgenossenschaft der Chemischen Industrie) zuzuordnen sind, ist größer als 100 m^3. Die Explosions-Richtlinie ist zu beziehen über die Berufsgenossenschaft der Chemischen Industrie, Gaisbergstraße 11, 6900 Heidelberg.

[5]) Es gilt die Begriffsbestimmung in Anhang I Nr. 1.1.2.4.6 der Gefahrstoffverordnung vom 26. August 1986 (BGBl. I S. 1470), zuletzt geändert durch die Zweite Verordnung zur Änderung der Gefahrstoffverordnung vom 23. April 1990 (BGBl. I S. 790).

[6]) Es gilt die Begriffsbestimmung in Anhang I Nr. 1.1.2.4.7 der Gefahrstoffverordnung vom 26. August 1986 (BGBl. I S. 1470), zuletzt geändert durch die Zweite Verordnung zur Änderung der Gefahrstoffverordnung vom 23. April 1990 (BGBl. I S. 790).

Nr.	Stoff	Mengenschwelle in kg Spalte 1	Spalte 2	UN-Nr.[2])	CAS-Nr.[3])
12	Aldicarb	100	100		116-06-3
13	Aldrin	1 000	10 000	2761	309-00-2
14	Alkalichlorate	10 000	100 000		
15	Alkaliethoxide	10 000	100 000		
16	Alkalimetalle	1 000	10 000		
17	Alkalimethoxide	10 000	100 000		
18	Alkylbenzyldimethylammoniumchlorid	10 000	100 000		8001-54-5
19	Allylalkohol	1 000	10 000	1098	107-18-6
20	Allylamin	100	1 000	2334	107-11-9
21	Aluminiumchlorid, wasserfrei	50 000	500 000	1726	7446-70-0
22	o-Aminoazotoluol	1 000	10 000		97-56-3
23	4-Aminodiphenyl und seine Salze	1	1		92-67-1
24	Amiton und seine Salze	1	1		78-53-5
25	Ammoniak	20 000	200 000	1005	7664-41-7
26	Ammoniumnitrat			1942	6484-52-2
	26.1 Ammoniumnitrat oder ammoniumnitrathaltige Zubereitungen der Gruppe A nach Anhang IV Nr. 2 der Gefahrstoffverordnung vom 26. August 1986 (BGBl. I S. 1470)	50 000	500 000		
	26.2 Ammoniumnitrathaltige Zubereitungen der Gruppe B nach Anhang IV Nr. 2 der Gefahrstoffverordnung vom 26. August 1986 (BGBl. I S. 1470)	5 000 000	5 000 000		

Nr.	Stoff	Mengenschwelle in kg Spalte 1	Spalte 2	UN-Nr.[2])	CAS-Nr.[3])
27	Anabasin	100	100		494-52-0
28	Antimontrioxid, in atembarer Form	1 000	10 000	1549	1309-64-4
29	Arsen (III)- und Arsen (V)-Verbindungen	100	100		
30	Arsenwasserstoff (Arsin)	10	10	2188	7784-42-1
31	Asbest, in atembarer Form	1 000	10 000	2590	1332-21-4
32	Atrazin	100	1 000		1912-24-9
33	Auraminhydrochlorid	1 000	10 000		2465-27-2
34	Azinphos-ethyl	100	100	1995	2642-71-9
35	Azinphos-methyl	100	100		86-50-0
36	Benzalchlorid	50 000	500 000	1886	98-87-3
37	Benzaldehydcyanhydrin	1 000	10 000		532-28-5
38	Benzidin und seine Salze, wie	1	1	1885	92-87-5
	38.1 Benzidinhydrochlorid				531-85-1
	38.2 Benzidinsulfat				21136-70-9
39	Benzol	1 000	10 000	1114	71-43-2
40	Benzotrichlorid	50 000	500 000	2226	98-07-7
41	Benzoylchlorid	50 000	500 000	1736	98-88-4
42	Benzylchlorid	75 000	750 000	1738	100-44-7
43	Beryllium und seine Verbindungen	10	10	1567	7440-41-7

Nr.	Stoff	Mengenschwelle in kg Spalte 1	Spalte 2	UN-Nr.[2])	CAS-Nr.[3])
44	Biphenyle, bromierte, wie				
	44.1 Hexabrombiphenyl	1 000	10 000		36355-01-8
45	Biphenyle, polychlorierte (ab dreifach)	10 000	100 000	2315	1336-36-3
	45.1 Biphenyle, polychlorierte (ab fünffach)	100	1 000		
46	Bis-(chlormethyl)-ether	1	1	2249	542-88-1
46a	Bis-(2-chlorethyl)-sulfid	1	1		505-60-2
47	Bleialkylverbindungen, wie	1 000	10 000		
	47.1 Bleitetraethyl			1649	78-00-2
	47.2 Bleitetramethyl			1649	75-74-1
48	Boranate, wie	1 000	10 000		
	48.1 Natriumborhydrid			1426	16940-66-2
	48.2 Aluminiumborhydrid				
49	Bortrihalogenide	100	1 000		
50	Brom	100	1000	1744	7726-95-6
51	Bromadiolon	100	1 000		28772-56-7
52	Bromcyan	100	1 000	1889	506-68-3
53	Brommethan	100	1 000	1062	74-83-9
54	1,3-Butadien	1 000	10 000	1010	106-99-0
55	Butansulton	1 000	10 000		
56	2-Butenal (Crotonaldehyd)	10 000	100 000	1143	123-73-9
57	Cadmiumchlorid	10	100	2570	10108-64-2

Nr.	Stoff	Mengenschwelle in kg Spalte 1	Spalte 2	UN-Nr.[2])	CAS-Nr.[3])
58	Cadmiumnitrat	10 000	100 000		10325-94-7
59	Cadmiumstearat, in atembarer Form	1 000	10 000	2570	2223-93-0
60	Cadmiumsulfat	10 000	100 000		10124-36-4
61	Calciumchromat, in atembarer Form	1 000	10 000		13765-19-0
62	Carbofuran	100	100		1563-66-2
63	Carbophenothion	100	100	1995	786-19-6
64	Cellulosenitrat	10 000	100 000		9004-70-0
65	Cethyltrimethylammoniumbromid	1 000	10 000		57-09-0
66	Cethylpyridiniumchlorid	1 000	10 000		123-03-5
67	Chlor	2 000	20 000	1017	7782-50-5
68	Chlorcyan	100	1 000	1589	506-77-4
69	2-Chlorethanol	1 000	10 000	1135	107-07-3
70	Chlorfenvinphos	100	100		470-90-6
71	N-Chlorformyl-morpholin	1	1		15159-40-7
72	Chlorhexidin	1 000	10 000		55-56-1
73	Chlormephos	100	1 000		24934-91-6
74	Chlormethyl-methylether	1	1	1239	107-30-2
75	Chlorphacinon	100	1 000		3691-35-8
76	Chlorsulfonsäure	50 000	500 000	1754	7790-94-5
77	Chlorthiophos	100	1 000		60238-56-4
78	4-Chlor-o-Toluidin	1 000	10 000	2239	95-69-2

Nr.	Stoff	Mengenschwelle in kg Spalte 1	Spalte 2	UN-Nr.[2])	CAS-Nr.[3])
79	Chlorwasserstoff (verflüssigtes Gas)	2 000	20 000	1050	7647-01-0
80	Chrom (III)-chromate	1 000	10 000		24613-89-6
81	Chromoxychlorid	10 000	100 000	1758	7791-14-2
82	Chromsäure	10 000	100 000	2240	11115-74-5
83	Chromschwefelsäure	10 000	100 000		
84	Chromtrioxid	10 000	100 000	1463	1333-82-0
85	Coumaphos	100	1 000		56-72-4
86	Crimidin	100	100		535-89-7
87	Cumatetralyl	100	1 000		5836-29-3
88	Cyanohydrine	1 000	10 000		
	88.1 Ethylencyanhydrin	10 000	100 000	2810	109-78-4
89	Cyanide (nicht komplex), wasserlöslich	1 000	10 000		
	89.1 Natriumcyanid			1689	143-33-9
	89.2 Kaliumcyanid			1680	151-50-8
90	Cyanmethylquecksilberguanidin	100	1 000		502-39-6
91	Cyanphosphorsäuredimethylamid	100	1 000		63917-41-9
92	Cyanthoat	100	100		3734-95-0
93	Cyanwasserstoff	100	1 000	1051	74-90-8
94	Cycloheximid	100	100		66-81-9
95	Cyhexatin	1 000	10 000		13121-70-5
96	p,p'-DDT	1 000	10 000		50-29-3
97	Deiquat und seine Salze	100	1 000		2764-72-9
	97.1 Deiquatdibromid				85-00-7
98	Demeton-O	100	100	1995	298-03-3
99	Demeton-S	100	100	1995	126-75-0

Nr.	Stoff	Mengenschwelle in kg Spalte 1	Spalte 2	UN-Nr.[2])	CAS-Nr.[3])
100	Demeton-S-methylsulfon	100	1 000		17040-19-6
101	Dialifos	100	100		10311-84-9
102	2,4-Diaminoanisol	1 000	10 000		615-05-4
103	Diazomethan	100	1 000		334-88-3
104	1,2-Dibrom-3-chlorpropan	1 000	10 000	2872	96-12-8
105	1,2-Dibromethan	1 000	10 000	1605	106-93-4
106	Dichloracetylen	100	1 000		7572-29-4
107	3,3'-Dichlorbenzidin und seine Salze	1 000	10 000		91-94-1
	107.1 Dichlorbenzidindihydrochlorid				612-83-9
108	1,4 Dichlor-2-buten	1 000	10 000		764-41-0
109	2,2'-Dichlor-diethylether	1 000	10 000	1916	111-44-4
110	1,2-Dichlorethan	10 000	100 000	1184	107-06-2
111	Dichlorethylarsin	100	1 000	1892	598-14-1
112	2,4-Dichlorphenol	10 000	100 000	2020	120-83-2
113	Dichlorphenylarsin	1 000	10 000	1556	696-28-6
114	1,2-Dichlorpropan	10 000	100 000	1279	78-87-5
115	1,3-Dichlorpropen (cis und trans)	10 000	100 000		542-75-6
116	2,3-Dichlorpropen	10 000	100 000	2047	78-88-6
117	Dichromate, lösliche	10 000	100 000		
118	Dicrotophos	100	1 000		141-66-2
119	Dieldrin	100	1 000		60-57-1
120	0,0-Diethyl-S-(ethylsulfinylmethyl)-thiophosphat	100	100		2588-05-8

Nr.	Stoff	Mengenschwelle in kg Spalte 1	Spalte 2	UN-Nr.[2])	CAS-Nr.[3])
121	0,0-Diethyl-S-(ethylsulfonylmethyl)-thiophosphat	100	100		2588-06-9
122	0,0-Diethyl-S-(ethylthiomethyl)-thiophosphat	100	100		2600-69-3
123	0,0-Diethyl-S-(isopropylthiomethyl)-dithiophosphat	100	100		78-52-4
124	0,0-Diethyl-0-(4-methylcumarin-7-yl)-thiophosphat	100	1 000		299-45-6
125	0,0-Diethyl-S-(propylthiomethyl)-dithiophosphat	100	1 000		3309-68-0
126	Diethylsulfat	1 000	10 000	1594	69-67-5
127	Dimefox	100	100	3421	115-26-4
128	Dimetan	100	1 000		122-15-6
129	Dimethoat	10 000	100 000	2783	60-51-5
130	3,3'-Dimethoxybenzidin (o-Dianisidin) und seine Salze	1 000	10 000		119-90-4
	130.1 o-Dianisidindihydrochlorid	1 000	10 000		20325-40-0
131	3,3'-Dimethylbenzidin (o-Tolidin)	1 000	10 000		119-93-7
132	N,N-Dimethylcarbamoylchlorid	1	1	2262	79-44-7
133	Dimethylsulfamoylchlorid	1 000	10 000		13360-57-1
134	3,3'-Dimethyl-4,4'-diaminodiphenyl-methan	1 000	10 000		838-88-0
135	1,1-Dimethylhydrazin	1 000	10 000	1163	57-14-7
136	1,2-Dimethylhydrazin	1 000	10 000	2382	540-73-8
137	N,N-Dimethylnitrosamin	1	1		62-75-9
138	Dimethylsulfat	1 000	10 000	1595	77-78-1
139	4,6-Dinitro-o-kresol (DNOC) und seine Salze	1 000	10 000	1598	534-52-1
	139.1 DNOC-Natriumsalz				2312-76-7
140	Dinitrotoluole (Isomerengemisch)	10 000	100 000		2531-14-6

Nr.	Stoff	Mengenschwelle in kg Spalte 1	Spalte 2	UN-Nr.[2])	CAS-Nr.[3])
141	Dinobuton	100	1 000		973-21-7
142	Dinoseb und seine Salze	100	1 000		88-85-7
143	Dinoterb, seine Salze und Ester	100	1 000		1420-07-1
144	Dioxacarb	100	1 000		6988-21-2
145	Dioxathion	100	1 000	1995	78-34-2
146	Diphacinon	100	100		82-66-6
147	Dischwefeldichlorid (S_2Cl_2)	50 000	500 000	1828	10025-67-9
148	Disulfoton	100	100	1995	298-04-4
149	Endosulfan	1 000	10 000		115-29-7
150	Endrin	100	1 000	2065	72-20-8
151	Epichlorhydrin (1-Chlor-2,3-epoxypropan)	1 000	10 000	2023	106-89-8
152	EPN	100	100	1995	2104-64-5
153	Ethion	100	100	1995	563-12-2
154	Ethoprohos	100	1 000		13194-48-4
155	Ethylbromacetat	1 000	10 000	1603	105-36-2
156	Ethylcarbamat	1 000	10 000		51-79-6
157	Ethylenimin (Aziridin)	100	1 000	1185	151-56-4
158	Ethylenoxid	1 000	10 000	1040	75-21-8
159	S-(2-Ethylsulfinylethyl)-0,0-dimethyl-dithiophosphat	100	1 000		2703-37-9
160	Fenamiphos	100	1 000		22224-92-6

Nr.	Stoff	Mengenschwelle in kg Spalte 1	Spalte 2	UN-Nr.[2])	CAS-Nr.[3])
161	Fenbutatinoxid	1 000	10 000		13356-08-6
162	Fensulfothion	100	100		115-90-2
163	Fenthion	1 000	10 000		55-38-9
164	Fluenetil	100	100		4301-50-2
165	Fluor	100	1 000	1045	7782-41-4
166	Fluoralkansäuren, deren Derivate und Salze mit einer Kettenlänge bis c5	1	1		
167	Fluorwasserstoff[7])			1052	7664-39-3
	Fluorwasserstoff > 95 Gew.-%	100	1 000		
	Fluorwasserstoff ≧ 60 Gew.-% bis ≦ 95 Gew.-%	1 000	10 000		
	Fluorwasserstoff < 60 Gew.-%	10 000	50 000		
168	Fonofos	100	1 000		944-22-9
169	Formaldehyd[7]) (≧ 50 Gew.-%)	10 000	50 000	1198	50-00-0
170	Formetanat	100	1 000		22259-30-9
171	Glykolsäurenitril	100	100		107-16-4
172	Heptenophos	100	1 000		23560-59-0
173	Hexachlorbenzol	1 000	10 000	2729	118-74-1
174	1,2,3,4,7,8-Hexachlordibenzodioxin[7]) (HCDD) Gehalt in Stoffen oder Zubereitungen > 0,005 mg/kg (ppm)				34465-46-8
174a	1,2,3,7,8,9-Hexachlordibenzodioxin[7]) (HCDD) Gehalt in Stoffen oder Zubereitungen > 0,005 mg/kg (ppm)				34465-46-8
174b	1,2,3,6,7,8-Hexachlordibenzodioxin[7]) (HCDD) Gehalt in Stoffen oder Zubereitungen > 0,005 mg/kg (ppm)				34465-46-8

[7]) Die Konzentrationsangabe bezieht sich auf das Vorhandensein des Stoffes im bestimmungsgemäßen Betrieb.

Nr.	Stoff	Mengenschwelle in kg Spalte 1	Spalte 2	UN-Nr.[2])	CAS-Nr.[3])
175	Hexamethylphosphorsäuretriamid (HMPT)	1	1		680-31-9
176	Hydrazin[7]) (≧ 5 Gew-%)	1 000	10 000	2030	302-01-2
177	Isobenzan	100	100		297-78-9
178	Isodrin	100	100		465-73-6
179	Isofenphos	100	1 000		25311-71-1
180	Isolan	100	1 000		119-38-0
181	Jodessigsäure	1 000	10 000		64-69-7
182	Jodmethan	100	1 000	2644	74-88-4
183	Juglon	100	100		481-39-0
184	Kaliumtetracyanomercurat (II)	1 000	10 000		591-89-9
185	Kaliumtetrajodomercurat (II)	1 000	10 000		7783-33-7
186	Kobalt in atembarer Form als				
	186.1 Kobaltmetall	1 000	1 000		7440-48-4
	186.2 Kobaltoxid	1 000	1 000		1307-96-6
	186.3 Kobaltsulfid	1 000	1 000		1317-42-6
187	Lindan	1 000	10 000	2761	58-89-9
188	Malathion	1 000	10 000		121-75-5
189	Medinoterb und seine Salze	100	1 000		3996-59-6
	189.1 Medinoterbacetat	100	1 000		2487-01-6
190	Mephospholan	100	1 000		950-10-7

Nr.	Stoff	Mengenschwelle in kg Spalte 1	Spalte 2	UN-Nr.[2])	CAS-Nr.[3])
191	Mercaptane				
	191.1 Butanthiol	1 000	10 000		109-79-5
	191.2 Cyclohexylmercaptan	1 000	10 000		1569-69-3
	191.3 Ethanthiol	1 000	10 000		75-08-1
	191.4 tert.-Octanthiol	1 000	10 000		
	191.5 Perchlormethanthiol	1 000	10 000		594-42-3
	191.6 Propanthiol	1 000	10 000		170-03-9
192	Metallalkyle, wie	100	1000		
	192.1 Aluminiumalkyle	100	1 000		
	192.2 Magnesiumalkyle	100	1 000		
	192.3 Zinkalkyle	100	1 000		
	192.4 Zinnalkyle	10 000	100 000		
193	Metallhydride (Alkali- und Erdalkalimetalle)	100	1 000		
194	Methamidophos	100	1 000		10265-92-6
195	Methanthiol	1 000	10 000	1064	74-93-1
196	Methidathion	100	1 000		950-37-8
197	Methomyl	100	1 000		16752-77-5
198	4,4'-Methylen-bis-(2-chloranilin) (MOCA) und seine Salze	10	10		101-14-4
199	Methylisocyanat	100	150	2480	624-83-9
200	Methylisothiocyanat	1 000	10 000	2477	556-61-6
201	Methylquecksilberchlorid	100	1 000		115-09-3
202	Methylquecksilberthioacetamid	100	1 000		7548-26-7
203	Methylvinylsulfon	100	1 000		3680-02-2
204	Mevinphos	100	100	3017	7786-34-7

Nr.	Stoff	Mengenschwelle in kg Spalte 1	Spalte 2	UN-Nr.[2])	CAS-Nr.[3])
205	Mipafox	100	1 000	1995	371-86-8
206	Monocrotophos	100	1 000		919-44-8
207	Monofluoracetamid	1	1		640-19-7
208	Naphthaline, chlorierte	10 000	100 000		70776-03-3
209	2-Naphthylamin und seine Salze	1	1	1650	91-59-8
210	1-Naphthylthioharnstoff (ANTU)	100	1 000		86-88-4
211	Natriumamid	50 000	500 000	1425	7782-92-5
212	Natriumazid	1 000	10 000	1687	26628-22-8
213	Natriumfluoracetat	1	1	2629	62-74-8
214	Natriumpentachlorphenolat	1 000	10 000	2567	131-52-2
215	Natriumselenit	100	100	2630	10102-18-8
216	Nickel, in atembarer Form, als	100	1 000		
	216.1 Nickelmetall	100	1 000		7440-02-0
	216.2 Nickelsulfid und sulfidische Erze	100	1 000		10101-97-0
	216.3 Nickeloxid	100	1 000		1313-99-1
	216.4 Nickelcarbonat	100	1 000		39430-27-8
	216.5 sowie Nickelverbindungen in Form atembarer Tröpfchen	100	1 000		
217	Nickeltetracarbonyl	10	10	1259	13463-39-3
218	5-Nitroacenaphthen	1 000	10 000		602-87-9
219	4-Nitrobiphenyl	10	100		92-93-3
220	2-Nitronaphthalin	1 000	10 000	2538	581-89-5
221	2-Nitropropan	1 000	10 000	2608	79-46-9
222	Norbormid	100	1 000		991-12-4

Nr.	Stoff		Mengenschwelle in kg Spalte 1	Spalte 2	UN-Nr.[2])	CAS-Nr.[3])
223	Oleum[7])				1831	8014-95-7
	≥ 38 % freies SO_3		50 000	500 000		
	< 38 % freies SO_3		75 000	750 000		
224	Omethoat		10 000	100 000		1113-02-6
225	Osmiumtetroxid		1 000	10 000	2471	20816-12-0
226	Oxamyl		100	1 000		23135-22-0
227	Oxydisulfoton		100	100		2497-07-6
228	Paraoxon		100	100		311-45-5
229	Paraquat und seine Salze		100	1 000	2781	1910-42-5
	229.1 Paraquatdihydrochlorid		100	1 000		
230	Parathion		100	100	1668	56-38-2
231	Parathion-methyl		100	100	1668	298-00-0
232	Pentaboran		100	100	1380	19624-22-7
233	Pentachlorethan		1 000	10 000	1669	76-01-7
234	Pentachlorphenol		1 000	10 000	2020	87-86-5
235	1-Pentanthiol		1 000	10 000	1111	110-66-7
236	Peroxide, organische[7])					
	236.1 tert.-Butylperoxyacetat	≥ 57 Gew.-%	50 000	50 000	2095	107-71-1
	236.2 tert.-Butylperoxyisobutyrat	≥ 57 Gew.-%	50 000	50 000		109-13-7
	236.3 tert.-Butylperoxyisopropylcarbonat	≥ 57 Gew.-%	50 000	50 000		2372-21-6
	236.4 tert.-Butylperoxymaleat	≥ 57 Gew.-%	50 000	50 000		1931-62-0
	236.5 tert.-Butylperoxypivalat	≥ 57 Gew.-%	50 000	50 000		927-07-1
	236.6 Dibenzylperoxydicarbonat	≥ 57 Gew.-%	50 000	50 000		2144-45-8
	236.7 2,2-Di-(tert.-butylperoxy)-butan	≥ 57 Gew.-%	50 000	50 000		2167-23-9
	236.8 1,1-Di-(tert.-butylperoxy)-cyclohexan	≥ 57 Gew.-%	50 000	50 000		3006-86-8
	236.9 Di-sec.-butylperoxydicarbonat	≥ 57 Gew.-%	50 000	50 000		19910-65-7

Nr.	Stoff		Mengenschwelle in kg Spalte 1	Spalte 2	UN-Nr.[2])	CAS-Nr.[3])
236.10	Diethylperoxydicarbonat	≥ 30 Gew.-%	50 000	50 000		14666-78-5
236.11	2,2-Dihydroperoxypropan	≥ 30 Gew.-%	50 000	50 000		2614-76-8
236.12	Diisobutyrylperoxid	≥ 50 Gew.-%	50 000	50 000		3437-84-1
236.13	Di-n-propylperoxydicarbonat	≥ 57 Gew.-%	50 000	50 000		16066-38-9
236.14	3,3,6,6,9,9-Hexamethyl-1,2,4,5-tetroxacyclononan	≥ 57 Gew.-%	50 000	50 000		22397-33-7
236.15	Methylethylketonperoxid	≥ 48 Gew.-%	50 000	50 000		1338-23-4
236.16	Methylisobutylketonperoxid	≥ 57 Gew.-%	50 000	50 000		37206-20-5
236.17	Peroxyessigsäure	≥ 38 Gew.-%	50 000	50 000		79-21-0
237	Phenylquecksilbersalze		1 000	10 000		
237.1	Phenylquecksilberacetat		1 000	10 000	1674	62-38-4
238	Phorat		100	100	1995	298-02-2
239	Phosacetim		100	100		4104-14-7
240	Phosgen		100	750	1076	75-44-5
241	Phosphamidon		100	100		13171-21-6
242	Phosphide der Alkali-, Erdalkalimetalle, des Aluminiums und des Zinks		1 000	10 000		
243	Phospholan		100	1 000		947-02-4
244	Phosphor, weißer, gelber		1 000	10 000	1381	7723-14-0
245	Phosphorpentachlorid		50 000	500 000	1806	10026-13-8
246	Phosphortrichlorid		75 000	750 000	1809	7719-12-2
247	Phosphorwasserstoff		100	100	2199	7803-51-2
248	Piproctanyl und seine Salze		100	1 000		69309-47-3
248.1	Piproctanyliumbromid					56717-11-4

Nr.	Stoff	Mengenschwelle in kg Spalte 1	Spalte 2	UN-Nr.[2])	CAS-Nr.[3])
249	Promurit und seine Verbindungen	100	100		5836-73-7
250	1,3-Propansulton	1	1		1120-71-4
251	1-Propen-2-chlor-1,3-dioldiacetat	10	10		10118-72-6
252	beta-Propiolacton	1 000	10 000		57-57-8
253	Propylenimin	1 000	10 000	1921	75-55-8
254	Propylenoxid (1,2-Epoxypropan)	1 000	10 000	1280	75-56-9
255	Prothoat	100	1 000		2275-18-5
256	Pyranocumarin	100	1 000		5375-87-1
257	Pyrazoxon	100	100		108-34-9
258	Quecksilber, seine löslichen Salze und Quecksilber (II)-oxid	1 000	10 000	2809	7439-97-6
259	Quecksilberalkyle	1 000	10 000		
260	Rotenon	100	1 000		83-79-4
261	Sauerstoff, flüssiger	2 000 000	2 000 000	1073	7782-44-7
262	Sauerstoffdifluorid	10	10	2190	7783-41-7
263	Schradan	100	1 000		152-16-9
264	Schwefeldichlorid	1 000	1 000	1828	10545-99-0
265	Schwefelkohlenstoff	100	1 000	1131	75-15-0
266	Schwefeloxide				
	266.1 Schwefeldioxid	50 000	250 000	1079	7446-09-5
	266.2 Schwefeltrioxid	25 000	75 000	1829	7446-11-9
267	Schwefelpentafluorid (Dischwefeldecafluorid)	100	1 000		5714-22-7
268	Schwefelwasserstoff	100	1 000	1053	7783-06-4

Nr.	Stoff	Mengenschwelle in kg Spalte 1	Spalte 2	UN-Nr.[2])	CAS-Nr.[3])
269	Selenhexafluorid	10	10	2194	7783-79-1
270	Selenwasserstoff	10	10	2202	7783-07-5
271	Silbernitrat	1 000	10 000	1493	7761-88-8
272	Siliciumtetrachlorid	50 000	500 000	1818	10026-04-7
273	Stibin	100	100	2676	7803-52-3
274	Stickstoffoxide				
	274.1 Distickstoffoxid	10 000	100 000	1070	10024-97-2
	274.2 Stickstoffoxid	100	1 000	1660	10102-43-9
	274.3 Stickstoffdioxid	100	1 000	1067	10102-44-0
275	Strontiumchromat, in atembarer Form	1 000	10 000		7789-06-2
276	Sulfotep	100	100		3689-24-5
277	Sulfurylchlorid (SO_2Cl_2)	75 000	750 000	1834	7791-25-5
278	Tellurhexafluorid	10	100	2195	7783-80-4
279	TEPP	100	100		107-49-3
280	Terbufos	100	1 000		13071-79-9
281	Terphenyle, chlorierte	10 000	100 000		61788-33-8
282	1,1,2,2-Tetrabromethan	1 000	10 000	2504	79-27-6
283	Tetrabutylzinn	1 000	10 000		1461-25-2
284	2,3,7,8-Tetrachlordibenzodioxin[7]) (TCDD), Gehalt in Stoffen oder Zubereitungen > 0,002 mg/kg (ppm)				1746-01-6
285	1,1,2,2-Tetrachlorethan	1 000	10 000	1702	79-34-5
286	Tetrachlorethen	10 000	100 000	1897	127-18-4
287	Tetrachlormethan	100	1 000	1846	56-23-5

Nr.	Stoff	Mengenschwelle in kg Spalte 1	Spalte 2	UN-Nr.[2])	CAS-Nr.[3])
288	Tetramin	1	1		80-12-6
289	Thallium und seine Verbindungen	1 000	10 000		7440-28-0
290	Thiabendazol	100	1 000		148-79-8
291	Thionazin	100	100		297-97-2
292	Thiophenol	1 000	10 000	2337	108-98-5
293	Tirpate	100	100		26419-73-8
294	Thionylchlorid ($SO Cl_2$)	75 000	750 000	1836	7719-09-7
295	Titantetrachlorid	50 000	500 000	1838	7550-45-0
296	o-Toluidin	1 000	10 000	1708	95-53-4
297	2,4-Toluylendiamin	1 000	10 000	1709	95-80-7
298	Toluylendiisocyanat (TDI)	1 000	10 000	2078	91-08-7
299	Tolyfluanid	100	1 000		731-27-1
300	Triamifos	100	1 000		1031-47-6
301	Triazophos	100	1 000		24017-47-8
302	Tributylzinn-Verbindungen	1 000	10 000		
303	1,2,4-Trichlorbenzol	1 000	10 000	2321	120-82-1
304	2,3,4-Trichlor-1-buten	1 000	10 000	2322	2431-50-7
305	1,1,1-Trichlorethan	10 000	100 000	2831	71-55-6
306	Trichlorethan	10 000	100 000	1710	79-01-6
307	Trichlormethylsulfenylchlorid	100	100	1670	594-42-3
308	Trichlornitromethan	1 000	10 000	1580	76-06-2
309	Trichloronat	100	1 000		327-98-0

Nr.	Stoff	Mengenschwelle in kg Spalte 1	Spalte 2	UN-Nr.[2])	CAS-Nr.[3])
310	2,4,5-Trichlorphenol	1 000	10 000		95-95-4
311	Tricyclothexylzinn-Verbindungen	1 000	1 000		
	311.1 Azocyclotin	100	100		41083-11-8
312	Triethylenmelamin	10	10		51-18-3
313	Triphenylzinn-Verbindungen	1 000	10 000		
314	Uran und seine Verbindungen	100	1 000		7440-61-1
315	Vinylchlorid	100	1 000	1086	75-01-4
316	Warfarin	100	100	2476	81-81-2
317	Wasserstoff	50 000	50 000	1049	1333-74-0
318	Zinkchromat	1 000	10 000		1328-67-2
319	Zinkkaliumchromat	1 000	10 000		41189-36-0
320	2,3,7,8-Tetrabromdibenzodioxin[7]) (TBDD), Gehalt in Stoffen oder Zubereitungen größer als 0,002 mg/kg (ppm)				
321	1,2,3,7,8-Pentabromdibenzodioxin[7]) (PeBDD), Gehalt in Stoffen oder Zubereitungen größer als 0,002 mg/kg (ppm)				
322	2,3,4,7,8-Pentabromdibenzofuran[7]) (PeBDF), Gehalt in Stoffen oder Zubereitungen größer als 0,002 mg/kg (ppm)				

Chart III: Part One: List of Individual Substances or Preparations for Warehouses under Chart I Part Two

Number	Substances or Preparations	Threshold Quantities in kg
1	Acetylene (ethyne)	50,000
2	Acrolein (2-propenal)	200,000
3	Acrylonitrile	200,000
4	Alkali chlorate	100,000
5	Ammonia	200,000
6	Ammonium nitrate or preparations that contain it of Group A Chart IV No. 2 of Table 2-1	500,000
7	Preparations that contain ammonium nitrate of Group B Chart IV No. 2 of Table 2-1	10,000,000
8	Lead tetraethyl or Lead tetramethy (l)	50,000
9	Bromine	200,000
10	Methyl bromide	200,000
11	Chlorine	75,000
12	Hydrogen Chloride (liquefied gas)	200,000
13	Hydrogen Cyanide	20,000
14	1,2-Dibromethane	50,000
15	Diphenylmethandiisocyanate (MDI)	200,000
16	Ethylene oxide	50,000
17	Hydrogen fluoride	
	Hydrogen fluoride > 95 weight per cent	1000
	Hydrogen fluoride >= 60 weight per cent Hydrogen fluoride to <= 95 weight per cent	10,000
	Hydrogen fluoride < 60 weight per cent	50,000
18	Formaldahyde (Concentration >= 50 weight per cent)	50,000
19	Methylisocyanate	150
20	Phosgene	750

Table 2-2 (continued)

Number	Substances or Preparations	Threshold Quantities in kg
21	Herbicides, pesticides, or their active ingredients	100,000
22	Propylene oxide	50,000
23	Oxygen	2,000,000
24	Sulfur dioxide	250,000
25	Carbon bi- or disulfide	200,000
26	Sulfur trioxide	100,000
27	Hydrogen sulfide	50,000
28	Toluylene diisocyanate (TDI)	100,000
29	Hydrogen	50,000

Chart III: Part Two: Categories of Substances and Preparations for Warehouses Not Named in Part One

Number	Categories of Substances and Preparations	Threshold Quantity in kg
1	Substances and preparations that are classed Highly Toxic	20,000
2	Substances and preparations that are classed Highly Toxic, Toxic, Substances that promote burning, or explosive	200,000
3	Combustible gases*	200,000
4	Easily combustible gases**	50,000,000

*Substances or mixtures of substances that are easily combustible and that have an explosive zone in the gaseous state at standard pressure when mixed with air and whose boiling point at standard pressure is 20 °C or lower.

**Substances or mixtures of substances that have a flash point under 21 °C and whose boiling point at standard pressure is higher than 20 °C.

Chart IV: Categories of Hazardous Substances and Preparations

1	Highly toxic substances
2	Toxic substances
3	Substances that promote burning
4	Explosive substances
5	Combustible gases
6	Easily flammable fluids
7	Flammable fluides

Chart V: Information that Must be Included in Reports of Incidents and/or Disruptions of Proper Operation

1. General Information

1.1 Address of the owner/operator

1.2 Date and time of the event

Day Month Year Hour

1.3.1 Location of the event

1.3.2 State in which the event occurred

1.4 Type of facility (Designation and Column Number) under 4. BImSchV or under Appendix 1 of StoerfallVO (Designation and Number)

1.5 Portion of the facility in which disruption occurred

1.6 Type of Occurrence

Under Section 11 Paragraph 1 Number 1
Under Section 11 Paragraph 1 Number 2a
Under Section 11 Paragraph 1 Number 2b

1.7 Written Confirmation

First report
Additional information or correction
Final report

2. Type of Event

Substances involved (chemical name, substance number, CAS number, quantity involved)

Table 2-2 (continued)

2.1 Explosion
- a. Substances that caused explosion
- b. Substances released

2.2 Fire
- a. Substances that caught fire
- b. Substances produced as a result

2.3 Release of substances
- a. Substances released
- b. Substances produced as a result

3. Description of the Circumstances of the Incident or Disruption

3.1 Operating conditions of the part of the facility in which the event occurred

3.2 Event that caused the incident or the disruption, and the course the event took

3.3 Function of the safety systems, safety measures initiated

3.4 Environmental and atmospheric conditions

3.5 Information on similar incidents or disruptions at the facility

4. Protective measures taken during and after the incident or disruption

4.1 Inside the facility

4.2 Outside the facility

5. Cause of the incident or the disruption

5.1 Description if the cause is known

5.2 Description if the cause is being investigated

5.3 Description if the cause cannot be determined when the investigation is concluded

6. Nature and Scope of Damage

Table 2-2 (continued)

6.1 Inside the facility

6.1.1 Personal Injuries (Employees/Response Team)

	Explosion	Fire	Release	Dead
Injured				
ambulant				
stationary				
Poisoned				
ambulant				
stationary				

6.1.2 Other impairments suffered by persons yes/no

Type of impairment
Number of impaired

6.1.3 Damage to Property yes/no

Type of damage
Estimated cost of damage

6.1.4 Damage to the Environment yes/no

Type of damage
Scope of damage
Estimated cost of damage

6.1.5 Danger no longer exists X
Danger still present X
Type of danger

6.2 Outside the Facility

6.2.1 Personal Injuries (Employees/Response Team)

	Explosion	Fire	Release	Dead
Injured				
ambulant				
stationary				
Poisoned				
ambulant				
stationary				

6.2.2 Other impairments suffered by persons yes/no

Type of impairment
Number of impaired

Table 2-2 (continued)

6.2.3 Damage to Property	yes/no
Type of damage	
Estimated cost of damage	
6.2.4 Damage to the Environment	yes/no
Type of damage	
Scope of damage	
Estimated cost of damage	
6.2.5 The danger no longer exists	X
The danger is still present	X
Type of danger	

7. Measures taken to correct property damage outside the facility

8. Measures taken to correct damage to the environment

8.1 Inside the facility

8.2 Outside the facility

9. Conclusions drawn regarding improvments in facility safety

9.1 Conclusions regarding avoidance of similar incidents/disruptions

9.2 Conclusions regarding limiting the effects of the incident

9.2.1 Inside the facility

9.2.2 Outside the facility

9.3 Plans for enacting the measures

Chart VI: Information for the General Public

1. Name of the owner/operator and Location of the facility

2. Name and title of the person providing the information

3. Affirmation that the Hazardous Incident Regulation applies and that the obligations to provide information that result have been met

4. Brief, generally understandable description of the type and purpose of the facility

5. Names of the substances or preparations that could cause an incident, including information on the properties that make them dangerous

6. General instructions on the type of danger that an incident would cause, including possible effects on people and on the environment

7. Adequate information on how affected persons are to be warned and informed as the incident unfolds

8. Adequate information on how affected persons are to behave in the event of an incident

9. Affirmation that the owner/operator has taken appropriate measures on site (including being connected to the authorities competent for disaster control and the general prevention of danger) so as to be properly equipped in the event of an incident to keep its effects to a minimum

10. Reference to the facility-external alarm and danger prevention plan facility that has been worked out for managing the incident outside the confines of the site. This plan should also include suggestions for cooperation of the authorities competent for disaster control and the general prevention of danger in the event of an incident

11. Details on where further information may be obtained without violating secrets. Included among the documents to be kept secret are both trade secrets and business secrets.

Table 2-3

Facilities Required to Notify the Supervisory Authority of Their Existence (VbF, Section 8(1))

1. The storage facilities listed in the following table must notify the supervisory authority of their existence.

Location	Type of Container	Quantity Stored (in Liters) AI over...up to	Quantity Stored (in Liters) AII or B over...up to
Storage Rooms Above or Below Ground	Breakable Containers	60-200	200-1000
	Other Containers	450-1000	3000-5000
Outdoor Storage Areas for Above Ground Containers	Breakable Containers	N/A	25-100
	Other Containers	450-1000	3000-5000
Storage Areas for Underground Tanks Covered by less than 0.8 m of soil	N/A	0-1000	0-5000
Storage Areas for Underground Tanks Covered by at least 0.8 m of soil	N/A	0-10,000	0-30,000

2. Filling stations in enclosed areas in which a total of more than 200 L but less than 1000 L of combustible liquids of Dangerous-Materials Classes AI, AII, or B can be drawn off must notify the supervisory authority of their existence.

3. Filling stations for combustible liquids of Dangerous-Materials Class AIII that are in the same enclosed area with filling stations in enclosed areas in which a total of more than 200 L but less than 1000 L of combustible liquids of Dangerous-Materials Classes AI, AII, or B can be drawn off must notify the supervisory authority of their existence.

   (NOTE: If combustible liquids of Classes AII or B are stored together with combustible liquids of Class AI, 5 L of an AII or B liquid are considered equivalent to 1 L of AI liquid for the purposes of figuring totals in the above table. The relevant number of liters for AII or B liquids are then to be added to the number of liters of AI liquids in order to arrive at a total.)

   (NOTE: Only one-fifth of the quantities listed in the above table are used when determining whether or not to report the storage of Class AI combustible liquids whose flashpoints are lower than 125 ^{o}C.)

INSTALLATION:	COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT German	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) LGS (Base Supply) (2) BCE (Base Civil Engineering) (3) Fire Department (4) Safety Officer (5) BEE (Bioenvironmental Engineering) (6) Disaster Preparedness Office (7) LGT (Transportation Officer)

Section 3

Hazardous Waste Management

Section 3

HAZARDOUS WASTE MANAGEMENT

A. Applicability

Insofar as Air Force installations use hazardous materials, it is to be expected that they will also generate hazardous wastes. Therefore, at least some of the information in this protocol will be applicable to all installations.

B. National Laws and Regulations

For the most part, German law treats hazardous wastes in the context of solid waste in general, and as a result there are relatively few pieces of Federal legislation that deal exclusively with hazardous wastes. In order to establish the context in which German law treats hazardous waste, the general principles of waste management will be reviewed here along with the legislation more narrowly related to hazardous waste.

- The **Gesetz ueber die Vermeidung und Entsorgung von Abfaellen (Abfallgesetz -- AbfG)** (Act on the Reduction and Management of Wastes (*Waste Act*)) treats solid waste in general and contains in addition a number of provisions that are relevant to hazardous wastes in particular. The act articulates the twin principles that the production of waste is to be avoided and that what is produced is to be recycled if technically and economically feasible. Wastes are to be collected, transported, treated, and stored in such a way that all possibilities for recycling can be exploited. What cannot be recycled is to be disposed of in such a way that:
  - people's health is not endangered and their well-being is not diminished
  - useful animals, birds, wild animals, and fish are not endangered
  - water, soil, and useful plants are not adversely effected
  - air pollution and noise do not have adverse effects on the environment
  - the concerns of nature protection, protection of the countryside, and city planning are addressed
  - the public safety is not endangered or disturbed in other ways.

The *Waste Act* draws an distinction between *waste* (which is destined to be disposed of) and *residual material* (which is destined to be recycled). This distinction based on ultimate disposition extends to hazardous wastes as well and is accompanied by the general principle that the provisions of the *Waste Act* apply also to so-called residual materials until such time as the material or energy that is recovered from them re-enters economic circulation. Further, at least some of the provisions of the *Waste Act* also apply to waste oil if it is to be recycled.

The *Federal Waste Act* gives a large part of the responsibility for regulating the management of waste to the states. It is the states, for example, who are charged with drawing up waste management plans that they may then declare binding in whole or in part. The *Federal Waste Act* also allows the authorities competent under state law to exclude those wastes from disposal that, given their kind or amount, cannot be disposed of with wastes that accumulate in households. (See Part C (below) for a discussion of these matters as they relate to the management of hazardous waste in Rheinland-Pfalz.)

The states in turn task the counties or other smaller units of government with waste management. Those units of government may themselves engage in waste management, or they may hire private firms to do it for them. If both methods of waste management happen to be available to a given installation, it is left up to the given installation to work with the county to determine which means of management works most effectively, given the needs of the installation and the requirements of German law.

- The **Verordnung zur Bestimmung von Abfaellen nach Art. 2 Abs. 2 des Abfallgesetzes (Abfallbestimmungs-Verordnung -- AbfBestV)** (Regulation Defining Waste under Section 2 Paragraph 2 of the *Waste Act* (Waste Definition Regulation)) lists the materials that the Federal government says require particular monitoring; for all practical purposes it constitutes a list of hazardous wastes.

- The **Verordnung zur Bestimmung von Reststoffen nach Art. 2 Abs. 3 des Abfallgesetzes (Reststoffbestimmungs-Verordnung -- RestBestV)** (Regulation Defining Residual Materials under Section 2 Paragraph 3 of the *Waste Act* (Residual Materials Definition Regulation)) lists the materials that the Federal government says require particular monitoring until the time that they are recycled. We infer that the materials listed in the AbfBestV but not in the RestBestV are considered nonrecyclable. Thus, Table 3-1 contains a list of hazardous wastes that must be recycled if possible, and Table 3-2 contains a list of hazardous waste that is not recyclable but must instead be disposed of properly.

- The **Altoelverordnung (AltoelV)** (Waste Oil Regulation) contains a number of provisions on the handling of waste oil.

- The **Verordnung ueber die Entsorgung gebrauchter halogenierter Loesemittel (HKWAbfV)** (Regulation on the Management of Used Halogenated Solvents) contains a number of provisions on the handling of used halogenated solvents.

- The **Verordnung ueber Betriebsbeauftragte fuer Abfaelle** mandates the appointment of person(s) designated responsible for waste in a number of kinds of facilities, but our clinics and hospitals are the only ones to whom it is applicable.

  Other Federal legislation may occasionally contain provisions relevant to hazardous wastes.

- The **Bundesimmissionschutzgesetz (BImSchG)** (*Federal Immission Control Act*) contains provisions on the proper handling of waste/residual materials after the shutdown of certain kinds of facilities.

- The **Gesetz ueber die Umweltvertraeglichkeitspruefung (UVPG)** (*Environmental Impact Statement Act*) requires that environmental impact studies be done prior to the construction of or substantial modification to certain types of facilities under certain conditions. U.S. forces in Germany are permitted to substitute an environmental review for full-blown environmental impact statements.

- The **Gesetz zur Ordnung des Wasserhaushalts (Wasserhaushaltsgesetz -- WHG)** (*Water Resources Management Act*) (*Water Resources Act*) establishes a class of substances that are considered to be harmful to water. Waste or residual substances that are or contain substances harmful to water require special treatment under the WHG. These substances are covered in Section 8 (*POL Management*) of this manual.

C. State Laws and Regulations -- Rheinland-Pfalz

- The **Landesgesetz zur Ausfuehrung des Gesetzes ueber die Vermeidung und Entsorgung von Abfaellen (Landesabfallgesetz -- LAbfG)** (State Act Implementing the Act on the Reduction and Management of Wastes (*State Waste Act*)) contains only a few provisions relevant to the management of hazardous waste. Similar to what we saw in the case of Federal law, the *Waste Act* of Rheinland-Pfalz treats hazardous waste only in the context of waste in general. Exercising the authority given it by the Federal government, Rheinland-Pfalz does define in this act a class of so-called "special waste" (*Sonderabfaelle*) that, given what type it is and/or how much of it there is, can be excluded from the ordinary management process. The State Minister for Environment and Health is charged with establishing technical guidelines that relate to when such waste

is to receive special handling before it is deposited with the parties charged with managing it. The parties charged with managing special waste are named in a State Waste Management Plan. Neither the technical guidelines issued by the State Minister for Environment and Health nor the State Waste Management Plan could be taken into account here.

No other state legislation relevant to the management of hazardous waste was discovered.

D. Key Compliance Definitions

- *Competent Authority* - State governments or the agencies named by them determine who the competent authorities are, unless state law has already done so (AbfG, Section 19). In **Rheinland-Pfalz**, the highest-level authority competent for waste is the Ministry for Environment and Health. The higher-level authority competent for waste is the district administration (*Bezirksregierung*). The lower-level authority competent for waste is the county council (*Kreisverwaltung*), as the lower-level authority of state administration. In cities that do not belong to administrative districts (*kreisfreie Staedte*), however, the city administration is the lower-level authority competent for waste. For the purposes of the *Federal Waste Act*, the competent authority is the district administration (*Bezirksregierung*) (LAbfG, Sections 13(1) and 13(2)).

- *Halogenated Solvent* - liquid substances or preparations that contain more than 5 percent halogenated hydrocarbons by weight and that have a boiling point between 293 degrees Kelvin (°K) = 20 degrees Celsius (°C) and 423 °K = 150 °C at 1013 hPa (HKWAbfV, Section 1(2)).

- *Reconditioning* - any process the goal of which is to produce base oils (Grundoele), flux oils, *verfahrensbedingte Koppelprodukte*, or products that need further processing, from waste oil after the separation or chemical transformation of harmful substances, products of oxidation, or additives (AltoelV, Section 1).

- *Special Waste* **(Rheinland-Pfalz only)** - waste that is formally excluded from the ordinary management process because of what kind it is or how much of it there is (LAbfG, Section 3(1)).

- *Waste* - moveable goods or personal property that the installation wants to get rid of or the proper disposal of which is necessary for the preservation of the public good and the environment in particular. Moveable goods or personal property that the installation hands over to the entity responsible for its disposal are considered waste (even in the event of recycling) until such time as it or the energy obtained from it is reintroduced into economic circulation.

- *Waste Management* - includes waste recycling and the depositing of wastes, as well as the collection, transport, handling, and storage that are necessary to those activities (AbfG, Section 1(2)).

- *Waste Management Facilities* - facilities or installations licensed for the treatment, storage, and deposit of waste (AbfG, Section 4(1)).

- *Waste Oil* - used semi-fluid or fluid materials that consist in whole or in part of petroleum or synthetic oil; the term includes oil-containing residues from tanks, emulsions, and water-oil mixtures (AbfG, Section 5a(1)).

- *Waste Recycling* - the recovery of materials or energy from waste (AbfG, Section 1(2)).

HAZARDOUS WASTE MANAGEMENT

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(a)
All Installations	3-1 through 3-12	(1)(2)(3)(5)(9)(10)
Permitted Facilities	3-13 and 3-14	(1)(10)
Halogenated Solvents	3-15	(1)(2)(3)(9)(10)
Rheinland-Pfalz Hazardous Waste	3-16 through 3-18	(1)(2)(3)(5)(10)

(*)CONTACT/LOCATION CODE:

(1) BCE (Environmental Planning)
(2) DRMO (Defense and Reutilization Marketing Office)
(3) Accumulation Point Managers
(5) TSD (Treatment, Storage, Disposal) Facility Officer
(9) Base Supply
(10) Generating Activities

HAZARDOUS WASTE MANAGEMENT

Records to Review

- Generator (including TSDFs if they are also considered generators):

  - Hazardous waste manifests
  - Manifest exception reports
  - Employee training documentation
  - Contingency plan
  - Notifications of hazardous waste oil fuel marketing or blending activity
  - Hazardous waste disposal turn-in document (DD Form 1348-1)

- In addition to the above, TSDFs would be required to have:

  - Unmanifested waste reports
  - Facility audit reports (inspection log)
  - Waste analysis plan(s)
  - Operating record
  - Groundwater monitoring records and annual reports
  - Closure/post closure plans
  - Closure/post closure notices (where applicable)
  - Other documents as required by the permit

Physical Features to Inspect

- Disposal sites
- Generating areas
- Accumulation points
- Incinerators
- Vehicles used for transport
- Storage facilities (including drums)

Sources to Interview

- BCE (Environmental Planning)
- DRMO (Defense and Reutilization Marketing Office)
- Accumulation Point Managers
- TSD (Treatment, Storage, Disposal) Facility Officer
- Base Supply
- Generating Activities

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL INSTALLATIONS	
3-1. Determine actions or changes since previous review of hazardous waste management (GMP).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report. (1)(2)
...	...
3-2. Installations should maintain a file of German laws and regulations that pertain to hazardous waste management (GMP).	Verify that copies of the following Federal laws and regulations are kept at the installation: (1)(2) - *Gesetz ueber die Vermeidung und Entsorgung von Abfaellen (Abfallgesetz -- AbfG)* - *Altoelverordnung (AltoelV)* - *Verordnung zur Bestimmung von Abfaellen nach Art. 2 Abs. 2 des Abfallgesetzes (Abfallbestimmungs-Verordnung -- AbfBestV)* - *Verordnung zur Bestimmung von Reststoffen nach Art. 2 Abs. 3 des Abfallgesetzes (Reststoffbestimmungs-Verordnung -- RestBestV)* - *Verordnung ueber die Entsorgung gebrauchter halogenierter Loesemittel (HKWAbfV)* - *Verordnung ueber Betriebsbeauftragte fuer Abfall* - *Gesetz ueber die Umweltvertraeglichkeitspruefung (UVPG).* Verify that copies of the following state laws and regulations for Rheinland-Pfalz are kept at the installation if appropriate: - *Landesgesetz zur Ausfuehrung des Gesetzes ueber die Vermeidung und Entsorgung von Abfaellen (Landesabfallgesetz -- LAbfG).*
...	...
3-3. If both commercial and county-run waste management operations are available to the installation, the installation should work with the county to determine which management method will best meet its needs and the requirements of German law (GMP).	Determine if both commercial and county-run waste management operations are available to the installation. (1)(2)(5) Verify that the installation has worked with the county to determine which management method will best meet its needs and the requirements of German law.
...	...
3-4. The production of waste is to be avoided, and whatever waste is produced is to be recycled if technically and economically feasible (AbfG, Section 1a).	Verify that the installation has a waste minimization program in place. (1)(3)(9)(10) Verify that whatever waste is produced is being recycled if it is technically and economically feasible to do so.

(1) BCE (Environmental Planning) (2) DRMO (Defense Reutilization and Marketing Office) (3) Accumulation Point Managers (5) TSD (Treatment, Storage, and Disposal) Facility Officer (9) Base Supply (10) Generating Activities

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-5. Waste that cannot be recycled is to be disposed of in such a way that that takes into account certain specific concerns (AbfG, Section 2(1)).	Verify that waste that cannot be recycled is being disposed of in such a way that: (1)(2)(3)(9)(10) - people's health is not endangered and their well-being is not diminished - useful animals, birds, wild animals, and fish are not endangered - water, soil, and useful plants are not adversely effected - air pollution and noise do not have adverse effects on the environment - the concerns of nature protection, protection of the countryside, and city planning are addressed - public safety is not endangered or disturbed in other ways.
...	...
3-6. The installation must inform the competent authority of the existence of facilities where hazardous waste accumulates, or is collected, transported, or managed (AbfG, Section 1 (3)).	Verify that the installation has informed the competent authority of the existence of facilities where hazardous waste accumulates, is collected, transported, or managed (AbfG, Section 11(3)). (1)(2)(3)(5)(10)
...	...
3-7. An environmental review must be filed prior to construction of or substantial modification to certain facilities (UVPG, Section 3(1)).	Verify that environmental reviews are submitted prior to the construction of or significant modification to waste disposal facilities and facilities for the utilization or treatment of waste. (1)(2)(3)(5)(10) (NOTE: Substantial modification to the way such facilities are operated also requires that an environmental review be conducted.)
...	...
3-8. Waste may be handed over for treatment, storage, or deposit only to facilities that are properly approved under German law (AbfG, Section 4(1)).	Verify that waste is handed over for treatment, storage, or deposit only to facilities that are properly approved under German law. (1)(2)(5)
...	...

(1) BCE (Environmental Planning) (2) DRMO (Defense Reutilization and Marketing Office) (3) Accumulation Point Managers (5) TSD (Treatment, Storage, and Disposal) Facility Officer (9) Base Supply (10) Generating Activities

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-9. Records on the kind, quantity, and management of waste, and supporting documents must be kept by 1) operators of facilities where hazardous waste accumulates, 2) parties who collect or transport hazardous waste, and 3) the operators of facilities that manage hazardous waste (AbfG, Section 11(3)).	Verify that records on the kind, quantity, and management of waste, and supporting evidence are kept by 1) operators of facilities where hazardous waste accumulates, 2) parties who collect or transport hazardous waste, and 3) the operators of facilities that manage hazardous waste. (1)(2)(3)(5)(10)
...	...
3-10. The materials listed in Table 3-1 must be recycled, if at all possible (AbfG, Section 1a(2)).	Verify that provision is made for the recycling of the materials listed in Table 3-1. (1)(2)(10)
...	...
3-11. The materials listed in Table 3-2 may not be recycled but must instead be properly disposed of (AbfG, Section 2(3)).	Verify that the materials listed in Table 3-2 are being properly disposed of. (1)(2)(10)
...	...
3-12. Waste that contains harmful substances must be stored, collected, transported, and/or treated separately from other waste (AbfG, Section 14(1)(2)).	Verify that waste that contains harmful substances is stored, collected, transported, and/or treated, separately from other waste. (1)(2)(3)(5)(10)
...	...

(1) BCE (Environmental Planning) (2) DRMO (Defense Reutilization and Marketing Office) (3) Accumulation Point Managers (5) TSD (Treatment, Storage, and Disposal) Facility Officer (9) Base Supply (10) Generating Activities

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
PERMITTED FACILITIES	
3-13. Facilities that are listed in Table 1-1 (*Air Emissions Management*) must minimize the production of waste by employing processes that reduce the production of residual materials or by proper recycling of the residual materials they produce (AbfG 1a(1), BImSchG 5(1)(3)).	Determine whether the installation operates a facility that is listed in Table 1-1 (*Air Emissions Management*). (1)(10) Verify that waste minimization and/or recycling programs are in place.
...	...
3-14. In the event that a facility listed in Table 1-1 (*Air Emissions Management*) is shut down, any residual materials that are still on hand must be properly recycled or disposed of as waste in a way that does not harm the common good (BImSchG, Section 5(3)(2)).	Verify, in the event that a facility listed in Table 1-1 (*Air Emissions Management*) is shut down, that any residual materials still on hand are properly recycled or disposed of as waste in a way that does not harm the common good. (1)(10)
...	...
HALOGENATED SOLVENTS	
3-15. Facilities that use halogenated solvents to treat metal, glass, ceramic, or plastic surfaces so as to clean, lubricate, degrease, apply emulsion to, strip, bonderize, dry, or treat those surfaces in a similar fashion are subject to certain storage requirements (HKWAbfV, Section 1(1), 2(1), and 2(2)).	Verify that used halogenated solvents are stored separately according to the main original constituent initial material. (1)(2)(3)(9)(10) Verify that used halogenated solvents with different original constituent initial materials are not mixed with one another or with any other waste.
...	...

(1) BCE (Environmental Planning) (2) DRMO (Defense Reutilization and Marketing Office) (3) Accumulation Point Managers (5) TSD (Treatment, Storage, and Disposal) Facility Officer (9) Base Supply (10) Generating Activities

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
RHEINLAND-PFALZ HAZARDOUS WASTE	
3-16. Installations with special waste are to turn it over to the party responsible for managing it in accordance with the provisions of the State Waste Management Plan (LAbfG, Section 3(2)).	Verify that special waste is turned over to the party responsible for managing it in accordance with the provisions of the State Waste Management Plan. (1)(2)(5)
...	..
3-17. A permit issued by the competent authority is required by anyone who brings waste that was generated outside the area covered by a binding waste management plan into the area covered by it and by anyone who brings waste to a waste management facility other than the facility specified in the waste management plan (LAbfG, Section 6(1)).	Verify that anyone who brings waste that was generated outside the area covered by a binding waste management plan into the area covered by it has a permit from the competent authority. (1)(2)(5)(10) Verify that anyone who brings waste to a waste management facility other than the facility specified in the waste management plan has a permit from the competent authority.
...	...
3-18. Toxic waste, special waste, and other waste that requires special handling are to be kept separate from other waste (LAbfG, Section 17).	Verify that toxic waste, special waste, and other waste that requires special handling are kept separate from other waste. (1)(2)(3)(5)(10)

(1) BCE (Environmental Planning) (2) DRMO (Defense Reutilization and Marketing Office) (3) Accumulation Point Managers (5) TSD (Treatment, Storage, and Disposal) Facility Officer (9) Base Supply (10) Generating Activities

Table 3-1

List of Types of Waste that Require Special Attention and are Likely to be Found on Air Force Installations

Waste Code	Type of Waste	Origin (by way of example only)
172	Waste Wood	
172 11	Sawdust, sawmill waste that contains harmful contaminants that are predominantly organic	Soaking up petroleum, organic liquids and sludge
172 12	Sawdust, and sawmill waste that contains harmful contaminants that are predominantly inorganic	Soaking up fluids and sludge
172 13	Waste wood and wooden containers that contain harmful contaminants that are predominantly organic	Destruction of buildings, agriculture, horticulture
172 14	Waste wood and wooden containers that contain harmful contaminants that are predominantly inorganic	Demolition of buildings, agriculture, horticulture
187	Paper and cardboard waste	
187 10	Paper filters with harmful contaminants that are predominantly organic	Air and gas purification, filtration processes
187 11	Paper filters with harmful contaminants that are predominantly inorganic	Air and gas purification, filtration processes
187 12	Paper towels with harmful contaminants that are predominantly organic	Cleaning up chemicals
187 13	Paper towels with harmful contaminants that are predominantly inorganic	Cleaning up chemicals
187 14	Packaging materials with harmful contaminants or residues of predominantly organic contents	Industrial-type uses
187 15	Packaging materials with harmful contaminants or residues of predominantly inorganic contents	Industrial-type uses

Table 3-1 (continued)

Waste Code	Type of Waste	Origin (by way of example only)
313	Ashes, clinkers, dust from incinerators	
313 09	Filter dust from waste incineration facilities	Incineration of household waste or sewage sludge
313 10	Cinder from facilities that incinerate special wastes	Facilities that incinerate special waste
313 11	Filter dust from facilities that incinerate special wastes	Facilities that incinerate special waste
313 12	Solid reaction products from purification of gases from waste incineration facilities	Facilities that incinerate household waste or sewage sludge
313 13	Solid reaction products from purification of gases from facilities that incinerate special waste	Facilities that incinerate special waste
313 14	Solid reaction products from purification of gases from incinerators without *Reagips*	
313 16	Solid residues of pyrolysis	Pyrolysis facilities
314	Other solid mineral waste	
314 19	Dusts from the processing of cinder	Cinder processing
314 23	Oil-contaminated soil	Accidents, incidents involving oil
314 24	Other soil that contains harmful contaminants	Accidents, incidents
314 28	Used Oelbinder *booms*	Accidents involving oil
314 30	Mineral fiber waste that contains harmful contaminants	Use of such, demolition of buildings, facilities
314 35	Used filters and absorbent material (siliceous earth, activated charcoal) that contain harmful contaminants	Chemical cleaning, adsorptive cleaning of liquids and/or gases
314 37	Asbestos dusts, sprayed asbestos	Rehabilitation of buildings, facilities
314 40	Residues of abrasives that contain harmful contaminants	Mechanical treatment of surfaces
314 41	Rubble and excavated material that contain harmful contaminants	Demolition of buildings, facilities; accidents involving oils, chemicals

Table 3-1 (continued)

Waste Code	Type of Waste	Origin (by way of example only)
316	Mineral Sludges	
316 37	Bonderizing sludge	Surface refinement, bonderizing
316 41	Calcium fluoride sludge	Waste gas purification
316 42	Residues from up-stream cleaning of boilers	Steam production
351	Iron and steel waste	
351 06	Ferrous metal containers that still include residues of harmful contents	Any
351 07	Oil filters	Vehicles, vehicle maintenance, mechanical equipment
353	Waste that contains non-ferrous metals	
353 23	Nickel-cadmium batteries	Use
353 24	Batteries that contain mercury	Use
353 25	Dry cells	Use
353 26	Mercury, residues that contain mercury, mercury vapor lamps, fluorescent lights	Use
353 27	Non-ferrous metal containers that contain residues of harmful contents	Use
355	Metal sludges	
355 01	Zinc sludge	Print shop
399	Other mineral waste	
399 05	Residues from powder fire extinguishers	Maintenance of fire extinguishers
399 07	Residues that contain elementary sulfur	Gas purification
511	Galvanic sludges, metal hydroxide sludges	
511 13	Sludges of metallic hydroxides	Purification of industrial water

Table 3-1 (continued)

Waste Code	Type of Waste	Origin (by way of example only)
515	Salts	
515 07	Fertilizers	Use
515 12	Ammonium hydrogen fluoride	Refinement of metal surfaces
515 18	Sodium bromide	Use of photochemical materials
515 32	Chlorinated lime	Detoxification, disinfection
521	Inorganic acids	
521 01	Battery acids	Vehicles, scrap yards
521 02	Inorganic acids, mixtures of acids, acidic caustics	Surface treatment facilities
522	Organic acids	
522 01	Halogenated organic acids	Use
522 02	Unhalogenated organic acids	Use
524	Alkalines	
524 02	Caustic solutions, mixtures of same, basic caustics	Surface treatment
524 03	Ammonia solution	Use
527	Concentrates	
527 07	Fixative baths	Photo labs, print shops
527 12	Concentrates and semiconcentrates that contain Chromium VI	Surface treatment facilities
527 13	Concentrates and semiconcentrates that contain cyanide	Surface treatment facilities
527 14	Rinse- or washwater that contains cyanide	Surface treatment facilities

Table 3-1 (continued)

Waste Code	Type of Waste	Origin (by way of example only)
527 16	Concentrates and semiconcentrates that contain metallic salts	Surface treatment facilities
527 20	Rinse- or washwater that contains metallic salts	Surface treatment facilities
527 21	Copper etching solutions	Surface treatment facilities
527 22	Solutions of ferrous salts	Print shop
527 23	Developer	Photolabs, X-ray labs
527 25	Other concentrates and semiconcentrates, and rinse- and washwater	Photo labs
531	Fertilizer and pesticide waste	
531 03	Old stock and residues of herbicides and pesticides	Use
535	Waste from pharmaceutical products	
535 07	Disinfectants	Use
541	Petroleum and synthetic oils	
541 04	Contaminated fuels	Fuel depots
541 06	Transformer oils, thermal oils, and hydraulic oils that are free of PCBs	Transformers, public institutions
541 07	Transformer oils, thermal oils, and hydraulic oils that contain PCBs	Transformers, public institutions
541 08	Contaminated fuel oils (and diesel oils)	Fuel depots
541 09	Drilling oils, cutting oils, abrasive oils	Surface treatment facilities
541 10	Products and machinery materials that contain PCBs	Use and disposal of transformers, condensers, and hydraulic machinery materials
541 11	Other waste that contains PCBs	Any
541 12	Engine and transmission oils	Vehicle repair shops
541 13	Machine and turbine oils	Any

Table 3-1 (continued)

Waste Code	Type of Waste	Origin (by way of example only)
541 14	Engine, transmission, machine, and turbine oils; PCBs, halogenated PCB substitutes; refrigerator oils from coolers, freezers, and air-conditioners	Any
542	Petroleum-based greases and waxes	
542 02	Waste grease	Vehicle repair shops
542 09	Solid material contaminated with grease and/or oil	Vehicle repair shops
544	Emulsions and mixtures of petroleum products	
544 01	Synthetic coolants and lubricants	Surface treatment facilities
544 02	Drilling emulsions, abrasive emulsions, mixtures of emulsions	Surface treatment facilities
544 05	Compressor condensates	air- and gas compressors
544 06	Wax emulsions	Dewaxing of motor vehicles
544 08	Other oil-water mixtures	Any
547	Petroleum sludges	
547 01	Residues from sand traps	Sand traps
547 02	Contents of oil-water separators	Oil and light density material separators
547 03	Sludge from oil separation facilities [Oeltrennanlagen]	Decantation facilities,
547 04	Sludge from the cleaning of tanks and washing of barrels	Cleaning of tanks and barrels
547 05	Mixtures of pumice and oil	Surface treatment facilities
547 08	Sludge from honing or lapping	Working metal surfaces
547 10	Grinding sludge that contains oil	Working metal surfaces

Table 3-1 (continued)

Waste Code	Type of Waste	Origin (by way of example only)
552	Halogenated organic solvents and mixtures of solvents, other liquids that contain halogenated organic compounds	
552 01	1,2-Dichloroethane	Any
552 02	Chlorobenzenes	Any
552 03	Tricholormethane (Chloroform)	Any
552 05	Chlorinated fluorocarbons, coolants, propellants, solvents	Any
552 06	Dichloromethane	Surface treatment, enamel stripping
552 09	Tetracholoroethene (Per)	Chemical cleaning, surface treatment
552 11	Tetrachloromethane (Tetra)	Laboratories
552 12	Trichloroethanes	Chemical cleaning, surface treatment
552 13	Trichloroethene (Tri)	Chemical cleaning, surface treatment
552 20	Mixtures of solvents that contain halogenated organic solvents	Any
552 23	Other halogenated organic solvents	Any
522 24	Mixtures of solvents and water that contain halogenated organic compounds	Chemical cleaning
553	Organic solvents and other organic liquids that are free of halogenated organic compounds	
553 01	Aceton, or other aliphatic ketones	Any
553 03	Ethylene glycol	Coolants
553 06	Benzene, toluene, xylene	Surface treatment
553 10	Diethyl ether or other aliphatic ethers	Any
553 11	Dimethylformamide	Any
553 14	Dioxan	Any
553 15	Methanol and other liquid alcohols	Any
553 16	Methyl acetate or other aliphatic esters of acetic acid	Any

Table 3-1 (continued)

Waste Code	Type of Waste	Origin (by way of example only)
553 21	Carbon bi- or disulfides	Any
553 26	Benzine, petroleum ether, ligroin, solvent naphtha	Surface treatment
553 52	Aliphatic amines	Any
553 53	Aromatic amines	Any
553 56	Glycol ether	Brake fluids
553 57	Cold-refined [kaltreinig] solvents that are free of halogenated organic solvents	Any
553 59	Paint- and lacquer thinners (nitro thinners)	Surface treatment, painting
553 60	Kerosine	Surface treatment
553 70	Mixtures of solvents without halogenated organic solvents	any
553 73	Other unhalogenated organic solvents	Any
553 74	Mixtures of solvents and water that do not contain halogenated organic solvents	Any
554	Sludges and operating materials that contain solvents	
554 01	Sludges that contain solvents that include halogenated organic solvents	Any
554 02	Sludges that contain solvents without halogenated organic solvents	Any
554 03	Operating materials that contain solvents that include halogenated organic solvents	Any
554 04	Operating materials that contain solvents without halogenated organic solvents	Any
555	Paints, lacquers, varnishes	
555 03	Lacquer and paint sludges	Any
555 08	Paints, lacquers, varnishes	Production or use

Table 3-1 (continued)

Waste Code	Type of Waste	Origin (by way of example only)
555 09	Ink residues	Print shops
555 10	Paint shop waste that has not hardened	Paint shops
555 12	Waste lacquer, varnish, or paint that has not hardened	Paint shops
555 14	Organic coloring agents (pigments, dyes)	Any
555 15	Inorganic coloring agents (pigments, dyes)	Any
559	Adhesives, putties, unhardened rosins	
559 03	Rosin residues that have not hardened	Any
559 04	Rosin oil	Any
559 05	Pastes, adhesives that have not hardened	Any
559 07	Putties and fillers that have not hardened	Any
571	Other hardened plastics waste	
571 25	Ion-exchange rosins with harmful contaminants	Wastewater purification
571 27	Plastics containers that contain harmful residues of the contents	Any
572	Unhardened plastics waste, moulding materials, components	
572 01	Emollients that have halogenated organic components	Plastics processing
572 02	Fabrication residues from plastics processing	Plastics processing
572 03	Emollients that do not have halogenated organic components	Plastics processing

Table 3-1 (continued)

Waste Code	Type of Waste	Origin (by way of example only)
573	Plastics sludges and emulsions	
573 03	Plastics sludges and emulsions	Plastics processing
573 05	Plastics sludges that contain halogenated organic solvents	Plastics processing
573 06	Plastics sludges that contain solvents other than halogenated organic solvents	Plastics processing
577	Rubber sludges and emulsions	
577 06	Rubber sludge	Tire retreading, tire recycling
581	Waste from textile production and processing	
581 18	Laundry sludge	Laundries
582	Contaminated textiles	
582 01	Straining cloths, filter bags with harmful contaminants that are predominantly organic	Any
582 02	Straining cloths, filter bags with harmful contaminants that are predominantly inorganic	Any
582 03	Packaging material made of cloth, with harmful contaminants that are predominantly organic	Any
582 04	Packaging material made of cloth, with harmful contaminants that are predominantly inorganic	Any
582 05	Polishing cloths with harmful contaminants	Any
591	Explosive materials	
591 02	Explosive waste, waste munitions	Any
591 03	Polynitrated organic chemicals	Any
593	Laboratory waste, chemicals	
593 01	Fine chemicals	Laboratories, schools

Table 3-1 (continued)

Waste Code	Type of Waste	Origin (by way of example only)
593 02	Organic laboratory chemicals	Laboratories, schools
593 03	Inorganic laboratory chemicals	Laboratories, schools
593 04	Operating materials contaminated with chemicals	Laboratories, schools
596	Waste pre-mixed for waste disposal facilities	
596 03	Waste pre-mixed for purposes of incineration	Intermediate storage facilities, waste treatment facilities
596 04	Waste pre-mixed for purposes of deposit	Intermediate storage facilities, waste treatment facilities
598	Captured gases	
598 01	Gases in cartridges	Laboratories
598 02	Gases in pressurized cylinders	Laboratories
599	Other Waste from Processes of Transformation or Synthesis	
599 01	PCBs	Any
599 03	Phenols	Any
599 04	Organic peroxides	Any
599 05	Inorganic peroxides	Any

Table 3-1 (continued)

Waste Code	Type of Waste	Origin (by way of example only)
948	Sludges from industrial wastewater purification	
948 01	Sludges from industrial wastewater purification	Wastewater purification
953	Seepage water	
953 02	Seepage water from special waste dumps	Special waste dumps
953 03	Seepage water from slag dumps	Slag dumps
953 04	Sedimentation water from sludge dumps and settling tanks Sludge dumps, settling tanks	
954	Liquid waste from thermal waste treatment and from incinerators	
954 01	Washwater, process water waste treatment, incinerators	Exhaust scrubbers from
954 02	Water from cinder removal	Thermal waste treatment, incinerators
954 03	Residue from flue gas boiler cleaning	Thermal waste treatment, incinerators
971	Medical waste	
971 01	Infectious waste	Hospitals and clinics with at least one of the following departments: blood bank, surgery, dialysis, obstetrics, gynecology, isolation ward, microbiology, pathology, virology, physician's medical practice.
971 04	Body parts, waste organs	Hospitals, medical practices

Table 3-2

List of Types of Residual Materials that Require Special Attention and are Likely to be Found on Air Force Installations

NOTE: This table is substantially identical to Table 3-1, the List of Types of Waste that require special attention. Only the differences are listed here.

Residual Material Code	Type of Waste	Origin (by way of example only)
351 06	Ferrous metal containers that still contain residues of harmful contents, if they are not to be refilled	Any
353 27	Non-ferrous metal containers that still contain residues of harmful contents, if they are not to be refilled	Any
541	Petroleum-based and synthetic oils	
	The following are not considered residual materials:	
541 04		
541 06		
541 07		
541 08		
541 09		
541 12		
541 13		
541 14		
544	Emulsions and mixtures of petroleum products	
	The following are not considered residual materials:	
544 01		
544 02		
544 04		
544 08		
553	Organic Solvents and other organic liquids that are free of halogenated organic compounds	
	The following are not considered residual materials:	
553 26		
553 60		

Table 3-2 (continued)

Residual Material Code	Type of Waste	Origin (by way of example only)
571	Other hardened plastics waste	
571 27	Plastics containers that contain harmful residues of the contents, if they are not to be refilled	Any
596	Residual materials premixed for waste disposal facilities	
The following are not considered residual materials:		
596 03		
596 04		
953	Seepage water from dumps	
The following are not considered residual materials:		
953 02		
953 03		
953 04		
971	Medical residual material	
The following are not considered residual materials:		
971 01		
971 04		

INSTALLATION:	COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT German	DATE:	REVIEWER(S):

STATUS NA C RMA	REVIEWER COMMENTS:

(1) BCE (Environmental Planning) (2) DRMO (Defense Reutilization and Marketing Office) (3) Accumulation Point Managers
(5) TSD (Treatment, Storage, and Disposal) Facility Officer (9) Base Supply (10) Generating Activities

Section 4

Natural and Cultural Resources Management

Section 4

NATURAL AND CULTURAL RESOURCES MANAGEMENT

A. Applicability

Since Air Force installations often have extensive grounds that can serve as habitat for a number of species or as locations for natural or cultural resources, this section of the manual applies to all installations.

B. National Laws and Regulations

- The **Bundesnaturschutzgesetz** (*Federal Nature Protection Act*) generally makes the states responsible for legislating the details that implement broad principles articulated at the Federal level. The basic principle articulated by the Federal government is that changes in the form or use of areas that can significantly or lastingly impair the productive capacity of nature or its scenic character are to be avoided. When such interferences cannot be avoided, their consequences are to be offset. Use of the land for agricultural or silvicultural purposes or for the purposes of commercial fishing does not constitute interference. The states, however, are free to define the notion 'interference' more loosely or more stringently.

  Certain habitats or biotopes are protected by the Federal government. Additionally, it forbids disturbing wildlife, and catching, wounding, or killing it without good reason. It protects wild plants by making it illegal to remove them from their habitats or to use or destroy them (or parts of them) without good reason. Further, it establishes that species that are foreign to a particular area may not be released in that area without a permit from the state.

  The Federal Minister for the Environment, Nature Protection, and Reactor Safety is empowered to limit or prohibit the production, import/export, introduction into commerce, or use of specific appliances, tools, or equipment that can be used to kill, combat, catch, or exterminate wild plants or animals en masse or indiscriminately. Actions or processes that could lead to the extinction or other considerable impairment of populations of wild plant or animal species may also be limited or prohibited. Should the Federal Minister not make use of his powers in this respect, the states are free to issue such limitations or prohibitions.

As part of its efforts to protect, care for, and develop the natural heritage, the Federal government has designated certain species "specially protected." While the states may permit the removal of plant or animal species that are not specially protected, the *Bundesnaturschutzgesetz* specifically forbids one:

1. to set traps for, catch, wound, or kill wild animals of specially protected species or to remove any of the forms of them that occur in the course of their development, or to remove, harm, or destroy their nesting sites, dwelling places, or shelters
2. to cut off, pluck, tear off, tear up, dig up, harm, or destroy wild plants of specially protected species or parts of them or the forms of them that occur in the course of their development
3. to disturb wild animals of species threatened with extinction in their nesting sites, dwelling places, or shelters by seeking them out, photographing, or filming them, carrying out similar activities
4. to impair or destroy the habitats of wild plant species that are threatened with extinction by seeking them out, photographing or filming them, or carrying out similar activities
5. to take possession of, to acquire, or to exercise actual force over plants and animals of specially protected species, or to work on or process them
6. to sell, to stockpile for sale, to offer, or to promote the sale of plants and animals of specially protected species, or to exhibit them for commercial purposes
7. to introduce into commerce, or to promote or exhibit plants or animals of specially protected species for any other reason.

- The **Bundeswaldgesetz** (*Federal Forest Act*) makes it necessary to have a permit from the authority competent under state law in order to clear a forest or to convert it to a different use. Afforestation also requires a permit from the competent state authority. Broadly speaking, forests may be declared to be protected. Clear-cutting, or any similar activity, requires a permit from the competent state authority. States are charged with further regulating the details. States are empowered to set forests aside as recreational areas and to regulate details concerning those areas. This piece of Federal legislation allows people to enter a forest for recreational purposes at their own risk. Bicycling, horseriding, and the use of wheelchairs is restricted to paths and roads only; states are left to regulate further particulars. State laws that are promulgated on the basis of certain sections of the *Bundeswaldgesetz* apply to land used for defense purposes only insofar as applying them does not interfere with using the land properly for those purposes.

- According to the **Bundesjagdgesetz** (Federal Hunting Law), the hunting of certain species not on the list of specially protected species is permissible, but a license is required. The states are free to prohibit the hunting of game whose numbers are getting thin. When the numbers of game are endangered or threatened, one is forbidden to disturb the animals in their shelters, nesting or brooding sites, or dwelling places by seeking them out, photographing or filming them, or carrying out similar activities. The states regulate hunting in Nature Protections Areas, Wildlife Protection Areas, National Parks, and Game Preserves.

- Under the **Bundeswildschutzverordnung** (Federal Game Protection Ordinance) it is illegal to take possession of, to acquire, to exercise actual force over, to work on, to process, or otherwise to use certain species that may legally be hunted. It is also illegal to dispose of, to offer for sale, to transfer, or to introduce those species into commerce in any way, or to transport them for those purposes.

- The **Gesetz zur Ordnung des Wasserhaushalts (Wasserhaushaltsgesetz -- WHG)** (Act on the Management of Water Resources (*Water Resources Act*)) includes a number of provisions that have to do with the maintenance and development of surface waters and floodplains.

- Research in the *Gesetz zum Schutz deutschen Kulturgutes gegen Abwanderung* indicates that works of art, cultural artifacts, books, and archival materials are protected at the Federal level. The preservation of the cultural heritage appears to have been left to the individual states.

- The Federal government also participates in the following Conventions:
  - Convention on Wetlands of International Importance Especially as Waterfowl Habitat
  - Convention on the Conservation of European Wildlife and Natural Habitats
  - Convention on the Conservation of Migratory Species of Wild Animals

C. State Laws and Regulations -- Rheinland-Pfalz

Although Article 40 of the State Constitution (*Verfassung fuer Rheinland-Pfalz*) makes the state responsible for the care and protection of historical, cultural, and natural monuments, no regulations have yet been discovered that regulate those matters in detail. The same is true of Section 1 Paragraph 1 of the *Landespflegegesetz*, which mandates the preservation of cultivated landscapes of historical significance (or portions of such). However, Article 40 also makes

the state responsible for the care and protection of the landscape, and the key pieces of state legislation that touch on that part of natural resources management are:

- **Landespflegegesetz**
- **Landesforstgesetz**

• The **Landespflegegesetz** (State Landscape Management Law) is the central state law that articulates the principles that govern the relationship of humankind to the land and what is on or in it. It defines the notion of 'interference' and lays down the general principle that anyone who engages in an activity that counts as interference must refrain from all avoidable impairments to nature and the landscape and must remove or offset within a reasonable period of time such impairments as are unavoidable. Exemptions from all the provisions of the Act may be granted under certain conditions.

One of the means that the states have of carrying out their responsibility to protect, care for, and develop the natural and cultural heritage is to set aside parts of nature and landscape to be Nature Protection Areas, Landscape Protection Areas, Natural Monuments, and the like.

• The **Landesforstgesetz** (*State Forestry Act*) articulates the general principles that govern the management of forests in the State of Rheinland-Pfalz. It establishes that forests may be entered for recreational purposes free of charge, but at one's own risk. Neither the forest nor the management of it may be disrupted by persons who enter it.

• The **Landesverordnung zur Durchfuehrung des Landesforstgesetzes** contains provisions that deal with the prevention of forest fires.

• The **Fuenfte Landesverordnung zur Durchfuehrung des Landesforstgesetzes** also contains provisions that deal with the prevention of forest fires.

• The **Landesverordnung ueber das Sammeln von Weinbergschnecken** lays out the time of the year and conditions under which the species of snail *Helix pomatia* may legally be gathered for non-commercial purposes.

D. Key Compliance Definitions

The following definitions are taken from German laws and regulations; the source for each is cited in parentheses.

• *Animals* - this includes:

1. wild, captured, or bred animals that are not strays, and dead animals of wild species

2. the eggs, larvae, pupae, or other forms that occur in the course of the development of animals of wild species (BNatSchG, Section 20a(1)1).

- *Forest* - any area of land that is stocked with forest plants. Clear-cut and thinned out areas, paths in the woods, fire breaks and strips that divide the forest, glades and clearings, feeding areas for wild animals, woodyards, and other areas connected to the forest and in its service are also considered forest (Bundeswaldgesetz, Section 2(1); Landesforstgesetz, Section 9).

- *Higher-level Forest Authority* - the district governments (Bezirksregierungen) (Landesforstgesetz, Section 3).

- *Higher-level State Landscape Management Authority* - the district governments (Bezirksregierungen) (Landespflegegesetz, Section 30).

- *Highest-level Forest Authority* - the Ministry for Agriculture, Viticulture, and the Environment (Ministerium fuer Landwirtschaft, Weinbau und Umweltschutz) (Landesforstgesetz, Section 3).

- *Highest-level State Landscape Management Authority* - the Minister for Social Policy, Health, and Environment (Minister fuer Soziales, Gesundheit und Umwelt) (Landespflegegesetz, Section 30).

- *Lower-level Forest Authority* - the State Forestry Offices (Forstaemter des Landes) (Landesforstgesetz, Section 3).

- *Lower-level State Landscape Management Authority* - the county administrations (Kreisverwaltungen) or the administrative agencies of cities that are not part of administrative counties (Verwaltungen der kreisfreien Staedte) (Landespflegegesetz, Section 30).

- *Maintenance of Surface Waters* - the process by which surface waters, their banks and shores, and their environs are preserved. This includes preserving the proper drainage of water, and, in the case of navigable waters, preserving navigability. Maintenance also includes taking into account the needs of the natural environment, as well as the appearance and recreational value of the waterscape. States may impose additional, specific requirements. Unless otherwise noted, the maintenance of surface waters on installations is the responsibility of the installation (WHG, Sections 28-30).

- *Natural Monuments* - statutorily designated individual formations in nature the protection of which is necessary on scientific grounds, for reasons of natural history, for reasons relating to the geography, history, and/or institutions of the country, or because of their rarity, peculiarity, or beauty (BNatSchG, Section 17(1); Landespflegegesetz, Section 22(1)).

(NOTE: Any surrounding area that is necessary to the protection of the monument itself may also be protected. Such sites are listed in an official register at the lower-level landscape management authority.)

- *Plants* - this includes:
    1. wild, cultivated, and/or dead plants of wild species
    2. seeds, fruits, and other forms that occur in the course of the development of plants of wild species (BNatSchG, Section 20a(1)2).

    (NOTE: Immediately recognizable parts of wild animal and wild plant species as well as immediately recognizable derivatives of them are also considered plants and animals. The scientific designation of a species is normative for delimiting that species, and the species includes all the members of the levels of taxonomy under it.)

- *Protected Landscape Areas* - regions established by statutory order of the lower land management authority in which special protection of the natural environment is necessary (Landespflegegesetz, Section 21(1)).

    (NOTE: Such sites are listed in an official register at the State Office for Environmental Protection and Business Supervision (Landesamt fuer Umweltschutz und Gewerbeaufsicht).)

- *Protected Parts of the Landscape* - statutorily designated parts of nature or the landscape the protection of which is necessary in order to secure the environment's productive capacity, to improve, structure, or care for the visual character of the landscape, or to prevent negative impacts. Protection can extend in certain areas to the all the trees, hedges, or other constituent parts of the landscape (BNatSchG, Section 18(1); Landespflegegesetz, Section 20).

    (NOTE: Such sites are listed in an official register at the lower-level landscape management authority.)

NATURAL AND CULTURAL RESOURCES MANAGEMENT PROTOCOL

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(a)
All Installations	4-1 and 4-2	(1)(2)
Natural Resources	4-3 through 4-5	(1)
Surface Water Resources	4-6 and 4-7	(1)
Floodplains/Wetlands	4-8	(1)
Rheinland-Pfalz Natural Resources	4-9 through 4-24	(1)
Protected Species	4-25 through 4-30	(1)
Rheinland-Pfalz Protected Species	4-31 through 4-33	(1)
Rheinland-Pfalz Historic Properties	4-34	(2)

(*) CONTACT/LOCATION CODE:

(1) Natural Resources Manager (or Environmental Coordinator)
(2) Historic Preservation Officer (or Environmental Coordinator)

NATURAL AND CULTURAL RESOURCES MANAGEMENT

Records to Review

- For construction activities: documentation of finding of no adverse effect
- Environmental Impact Statement
- Installation Master Plan
- Land Use Plan
- Historic Preservation Plan
- Fish and Wildlife Plan
- Outdoor Recreation Plan
- Cropland and Grazing Plan
- Forest Management Plan

Physical Features to Inspect

- Construction sites
- Site or landmark of historic of archaeological interest
- Facilities constructed in the past 2 years (yr)
- Wildlife containment areas
- Wildlife habitat, and land and water resources
- Equipment which could damage wildlife, its habitat, or land and water resources

Sources to Interview

- Natural Resources Manager (or Environmental Coordinator)
- Historic Preservation Officer (or Environmental Coordinator)

COMPLIANCE CATEGORY: NATURAL AND CULTURAL RESOURCES MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL INSTALLATIONS	
4-1. Determine actions or changes since previous review of natural and cultural resources management (GMP).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report. (1)(2)
...	...
4-2. Installations should maintain a file of German laws and regulations pertaining to Natural and Cultural Resources Management (GMP).	Verify that copies of the following Federal laws and regulations are kept at the installation: (1)(2) - *Bundesartenschutzverordnung, (BArtSchV).* - *Bundesjagdgesetz.* - *Bundesnaturschutzgesetz, (BNatSchG).* - *Bundeswaldgesetz.* - *Bundeswildschutzverordnung, (BWildSchV).* - *Gesetz zur Ordnung des Wasserhaushalts, (WHG).* Verify that copies of the following state laws and regulations for Rheinland-Pfalz are kept at the installation: - *Landespflegegesetz.* - *Landesforstgesetz.* - *Landesverordnung zur Durchfuehrung des Landesforstgesetzes.* - *5. Landesverordnung zur Durchfuehrung des Landesforstgesetzes.* - *Landesverordnung ueber das Sammeln von Weinbergschnecken.*
...	...

(1) Natural Resources Manager (or Environmental Coordinator) (2) Historic Preservation Officer (or Environmental Coordinator)

COMPLIANCE CATEGORY: NATURAL AND CULTURAL RESOURCES MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
NATURAL RESOURCES	
4-3. Certain specific biotopes must be protected (BNatSchG, Section 20c).	Determine if the installation includes any of the following biotopes: (1) - marshland (Moore) - swamps (Suempfe) - reed banks (Roehrichte) - wet meadows rich in sedges [Carex] or rushes [Juncus] (seggen- und binsenreiche Nasswiesen) - headwater regions (Quellbereiche) - parts of rivers and streams that are unobstructed and in their natural state (naturnahe und unverbaute Bach- und Flussabschnitte) - areas of standing waters where deposition is occurring (Verlandungsgebiete stehender Gewaesser) - open interior dunes (offene Binnenduenen) - open, natural slopes of blocks or scree (offene natuerliche Block- und Geroellhalden) - dwarf shrub and juniper heaths (Zwergstrauch- und Wacherheiden) - plots of matweed [Nardus stricta] (Borstgrasrasen) - dry meadow (Trockenrasen) - woods and thickets of dry/warm habitat (Waelder und Gebuesche trockenwarmer Standorte) - fenwoods or carrs (Bruchwaelder) - marshy woods (Sumpfwaelder) - lowland forests (Auwaelder) - rocky coasts, bluffs (Fels- und Steilkuesten) - beach banks, dunes, salt flats, mudflats in coastal areas (Strandwaelle sowie Duenen, Salzwiesen und Wattflaechen im Kuestenbereich) - open cliff formations, alpine fields, and snow-lies and elfinwood in alpine regions (offene Felsbildungen, alpine Rasen sowie Schneetaelchen und Krummholzgebuesche im alpinen Bereich). Verify that no damage or substantial or lasting impairment is occurring or has occurred to any of the above biotopes on the installation.
...	...
4-4. Natural monuments and protected parts of the landscape must be protected (BNatSchG, Sections 17 and 18).	Determine if the installation has any natural monuments and/or protected portions of landscape on its grounds. (1) Verify that neither natural monuments nor the land surrounding them have been removed, destroyed, damaged, changed, or subjected to any lasting disruption. Verify that protected portions of the landscape have not been removed, destroyed, damaged, changed, or subjected to any lasting disruption.
...	...

(1) Natural Resources Manager (or Environmental Coordinator) (2) Historic Preservation Officer (or Environmental Coordinator)

COMPLIANCE CATEGORY: NATURAL AND CULTURAL RESOURCES MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-5. A permit from the authority competent under state law is required in order to clear a forest or to convert it to a different use, or for afforestation (Bundeswaldgesetz, Sections 9 and 10).	Verify that the installation has the necessary permits for clearing, conversion, and/or afforestation, if these activities have taken place or will take place. (1)
...	...
SURFACE WATER RESOURCES	
4-6. Maintenance of surface waters, including banks and shores, is subject to regulation and, unless otherwise specified, is the responsibilty of the installation (WHG, Sections 28-30).	Determine the extent to which the installation is responsible for maintenance of surface waters. (1) Verify that surface waters, as well as banks and shores, are maintained properly.
...	...
4-7. Any type of development which affects surface water or its shores (construction, removal, or significant change, including dikes and dams) must have prior approval (WHG, Section 31).	Verify that approval has been obtained prior to any development. (1) (NOTE: While development of surface water is not considered use of water, so that no permit for water use is required, it is subject to other ordinances. Approval of development is contingent on proper proceedings meeting the requirements of the Law on Environmental Impact Statements.)
...	...
FLOODPLAINS / WETLANDS	
4-8. Floodplains are required to be managed according to certain standards (WHG, Section 32).	Determine whether the installation's grounds include any floodplains. (1) Verify that provisions are made to guarantee the harmless drainage of floodwaters.
...	...

(1) Natural Resources Manager (or Environmental Coordinator) (2) Historic Preservation Officer (or Environmental Coordinator)

COMPLIANCE CATEGORY: NATURAL AND CULTURAL RESOURCES MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
RHEINLAND-PFALZ NATURAL RESOURCES	
4-9. In Protected Landscape Areas all those activities are prohibited that change or could change the character of the area or that are likely to threaten the goals that the area was established to further (Landespflegegesetz, Section 18(2)).	Determine if the installation's grounds include Protected Landscape Areas. (1) Determine if the installation has been informed of statutory orders by the lower-level landscape management authority that specify prohibited activities. Verify that the installation is complying with any pertinent statutory orders.
...	...
4-10. In Nature Protection Areas all those activities are prohibited that can destroy, damage, or change the area or its parts or that can lead to a lasting disruption of it (Landespflegegesetz, Section 21(2)).	Determine if the installation's grounds include Nature Protection Areas. (1) Determine if the installation has been informed of statutory orders by the higher-level land management authority that specify prohibited activities. Verify that the installation is complying with any pertinent statutory orders.
...	...
4-11. Removal of a natural monument is prohibited, as are all such activities as lead to the destruction of it, damage or change to it, or to a lasting disruption of it or of the protected areas that may surround it (Landespflegegesetz, Section 22(2)).	Determine if any natural monuments are to be found on the installation's grounds. (1) Determine if the installation has been informed of statutory orders that specify forbidden activities. Verify that the installation is complying with any pertinent statutory orders.
...	...
4-12. Though anyone may enter the forest free of charge at his own risk, whoever does so must behave in such a way that neither the forest nor the management of it is disrupted (Landesforstgesetz, Section 11(1) and 11(2)).	Verify that the forest is not being endangered, damaged, or polluted by those who enter it. (1)
...	...

(1) Natural Resources Manager (or Environmental Coordinator) (2) Historic Preservation Officer (or Environmental Coordinator)

COMPLIANCE CATEGORY: NATURAL AND CULTURAL RESOURCES MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-13. Access to areas within the forest may be denied temporarily with the permission of the lower-level forest authority, or if there are compelling reasons for doing so (Landesforstgesetz, Section 11(5)).	Verify that permits have been obtained for temporarily restricting access to areas of the forest, if access has been denied for other than compelling reasons. (1)
...	...
4-14. Cutting or any activity that reduces growth in a protected forest requires the approval of the higher-level forest authority (Landesforstgesetz, Section 18).	Determine if any protected forests are on the installation. (1) Verify that the installation has the necessary permits for cutting and like activities in protected forests.
...	...
4-15. Forest owners are obligated to reforest clear-cut areas without delay in a manner consistent with the principles of forestry (Landesforstgesetz, Section 21(1)(a)).	Verify that clear-cut areas have been or are being reforested. (1)
...	...
4-16. Forest owners are obligated to protect and tend areas where natural regeneration or seeding and planting is taking place (Landesforstgesetz, Section 21(1)(b)).	Verify that areas where natural regeneration or seeding and planting is taking place are being protected and tended. (1)
...	...
4-17. Forest owners are obligated to care for the trees and develop them in a manner consistent with the principles of forestry (Landesforstgesetz, Section 21(1)(c)).	Verify that trees are being cared for and developed in a manner consistent with the principles of forestry. (1)
...	...

(1) Natural Resources Manager (or Environmental Coordinator) (2) Historic Preservation Officer (or Environmental Coordinator)

COMPLIANCE CATEGORY: NATURAL AND CULTURAL RESOURCES MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-18. Clear-cutting evergreens in stands under 50 yr of age or deciduous trees in stands under 80 yr of age is forbidden, as is taking any measure that reduces their growth (Landesforstgesetz, Section 21(2)).	Verify that no evergreen stands younger than 50 yr of age and no stands of deciduous trees under 80 yr of age are being clear-cut and that their growth is not otherwise being inhibited. (1) (NOTE: Stumps may be removed and deciduous softwood may be cut. The lower-level forest authority may grant exceptions.)
...	...
4-19. Forest owners must prevent and combat the dangers of fire, soil erosion, and mudslides at steep slopes as part of forest management (Landesforstgesetz, Section 26(1)).	Verify that forest management on the installation includes the prevention of fire, soil erosion, and mudslides at steep slopes. (1)
...	...
4-20. Certain activities are prohibited in the interests of preventing forest fires (Landesverordnung zur Durchfuehrung des Landesforstgesetzes, Section 20).	Verify that no open fires (including grill fires) are laid in the forest in areas that are not sufficiently developed for that purpose or closer than 100 meters (m) to the edge of the forest. (1) Verify that no one keeps open fires burning in the forest or closer than 100 m to the edge of the forest and that no one carries open fire with him in the forest. Verify that no one throws burning or glowing objects away or treats such things carelessly either in the forest or closer than 100 m to the edge of the forest. Verify that no smoking occurs in the forest between 1 March and 31 October.
...	...
4-21. Certain activities require the permission of the lower-level forest authority (Landesverordnung zur Durchfuehrung des Landesforstgesetzes, Section 20(3)).	Verify that a permit from the lower-level forest authority is held for any building with a fireplace or that is intended to enclose an open fire that is erected in the forest or within 30 m of the edge of it. (1)
...	...

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COMPLIANCE CATEGORY: NATURAL AND CULTURAL RESOURCES MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-22. Certain activities require the permission of the lower-level forest authority (*Fuenfte* Landesverordnung zur Durchfuehrung des Landesforstgesetzes, Section 2(3)).	Verify that a permit from the lower-level forest authority is held for any facility to which a fireplace is connected that is built in the forest or within 100 m of its edge. (1)
...	...
4-23. Horseback riding is not permitted on footpaths or on trails set aside for hiking, nor is it permitted on other than specially designated riding trails in nature parks or in nature protection areas (Landesforstgesetz, Section 12(1)).	Verify that horseback riding takes place only where it is permitted. (1)
...	...
4-24. New hiking trails may be marked only with the approval of the lower-level forest authority (Landesforstgesetz, Section 13(1)).	Verify that no new hiking trails are being marked without the consent of the lower-level forest authority. (1)
...	...
PROTECTED SPECIES	
4-25. Wild animal and plant species must be protected (BNatSchG, Section 20d).	Verify that no wildlife is being disturbed, caught, wounded, or killed without good reason. (1) Verify that wild plants or parts of wild plants are not being removed from their habitats, used, or destroyed without good reason. Verify that the habitat of wild animals and plants is not being impaired or destroyed without good reason.
...	...

(1) Natural Resources Manager (or *Environmental Coordinator*) (2) Historic Preservation Officer (or Environmental Coordinator)

COMPLIANCE CATEGORY: NATURAL AND CULTURAL RESOURCES MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-26. Animal and plant species that have been designated "specially protected species" are subject to special provisions (BNatSchG, Sections 20e, 20f, 20g(7)).	Determine if any of the species in Table 4-1 are present on the installation. (1) Verify that no specially protected wild animal species is being trapped, caught, wounded, killed, or removed, and that their nesting sites, dwellings, or shelters are not being harmed or destroyed. Verify that no specially protected wild plant species or parts of such are being cut off, plucked, torn off, torn up, dug up, harmed, or destroyed. Verify that no species of wild animals that are threatened with extinction or their nesting sites, dwellings, or shelters are being disturbed by seeking them out, or by photographing or filming them, or by carrying out similar activities. Verify that no habitats of wild plant species that are threatened with extinction are being impaired or destroyed by seeking them out, by photographing or filming them, or by carrying out similar activities. Verify that no specially protected species of plants or animals are being taken possession of, acquired, worked on, or processed. Verify that no specially protected species of plants or animals are being sold, stockpiled for sale, offered for sale, or exhibited for commercial purposes. Verify that no plants or animals of specially protected species are being introduced into commerce, promoted, or exhibited for any other reason. Verify that the following methods are not used to pursue, lure, catch, or kill animals of specially protected species or vertebrate species that fall outside the scope of the Bundesjagdgesetz (BArtenSchV, Section 13 (1)): - snares, nets, traps, hooks, glue, or other adhesives - living animals used as bait - artificial light sources, mirrors, or other equipment that employs light or blinds the animal - acoustic or electrical devices - gas, smoke, intoxicating or toxic substances - semi-automatic or automatic weapons with magazines that hold more than two cartridges, or electronic night-sight equipment - explosives - motor vehicles or aircraft - boats with a speed of more than 5 kilometer (km)/hour (h). (NOTE: See Table 4-2 for lists of species that may be hunted legally.) (NOTE: Under Federal Law, the states may permit the gathering of Roman snails (Helix pomatia) with shells of at least 30 millimeter (mm) between 1 April and 15 June in any one year.)
...	...

(1) Natural Resources Manager (or Environmental Coordinator) (2) Historic Preservation Officer (or Environmental Coordinator)

COMPLIANCE CATEGORY: NATURAL AND CULTURAL RESOURCES MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-27. Mushrooms of specific protected species may be picked in small quantities for private use (BArtSchV, Section 2(1)).	Verify that mushrooms of no protected species other than the following are being picked in small quantities for private use: (1) - Steinpilz (Boletus edulis) edible boletus - Pfifferling (Cantharellus spp.) chanterelle (all native species) - Braetling (Lactarius volemus) lacteous agaric - Birkenpilz und Rotkappe (Leccinum spp.) rough-stemmed boletus and red boletus (all native species) - Morchel (Morchella spp.) morel (all native species).
...	...
4-28. It is illegal to take possession of, to acquire, to exercise actual force over, to work on, to process, or otherwise to use certain animal species, or to dispose of them, offer them for sale, to transfer them, or otherwise introduce them into commerce, or to transport them for those purposes (BWildSchV, Section 2(1)).	Verify that the above activities are not taking place with regard to the animal species listed in Table 4-3. (1)
...	...
4-29. Permits under state law are required before plants or animals of wild or domesticated species that are not indigenous to a particular area may be released or otherwise introduced into the wild (BNatSchG, Section 20d).	Verify that no plants or animals not indigenous to the area are being released or otherwise introduced into the wild without permits from the state. (1) (NOTE: This does not apply to agricultural or silvicultural activities.)
...	...
4-30. If the numbers of species that can be hunted are sufficiently reduced, their shelters, nesting sites, brooding sites, and dwellings may not be disturbed (Bundesjagdgesetz, Section 19a).	Verify that game species whose numbers are low are not being sought out, photographed, filmed, or otherwise disturbed. (1)
...	...

(1) Natural Resources Manager (or Environmental Coordinator) (2) Historic Preservation Officer (or Environmental Coordinator)

COMPLIANCE CATEGORY: NATURAL AND CULTURAL RESOURCES MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
RHEINLAND-PFALZ PROTECTED SPECIES	
4-31. Rare species of wild plants and animals are to be protected, as are those that are threatened with extinction and those species that are important to the management of the land or to education. Their habitats and communities are to be protected as well (Landepflegegesetz, Sections 24(1) and 24(2)).	Verify that none of the activities listed in Table 4-4 are being carried out on the installation. (1)
...	...
4-32. Plants of wild and domesticated species that are not indigenous to a particular area and wild and domesticated animal species that are not indigenous to a particular area may not be released into the wild without a permit from the higher-level land management authority (Landespflegegesetz, Section 24(3)).	Verify that no such activity is taking place on the installation. (1) (*NOTE: This does not apply to the cultivation of plants in agriculture and silviculture.*)
...	...
4-33. Roman snails (Helix pomatia) may be gathered only if they are of a certain size and only within certain areas and timeframes (Landesverordnung ueber das Sammeln von Weinbergschnecken, Section 2).	Verify that Roman snails (Helix pomatia) with shells of at least 30 mm in diameter are gathered only between 1 April and 15 June within the areas and timeframes listed in Table 4-5. (1) Verify that all gatherers of Roman snails are in possession of 30 mm measuring rings. Verify that no snails whose shells are smaller than 30 mm are taken. (NOTE: No gathering may occur within nature protection areas or natural monuments.)
...	...

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COMPLIANCE CATEGORY: NATURAL AND CULTURAL RESOURCES MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
RHEINLAND-PFALZ HISTORIC PROPERTIES **4-34.** Cultivated landscapes of historical significance that are unique (or parts of them) are to be preserved, as is the land that surrounds other cultural, architectural, or land monuments (Bodendenkmaeler) that are protected or are worth protecting, if it is necessary in order to preserve the unique character or the beauty of the monument (Landespflegegesetz, Section 2(13)).	Determine if the installation includes cultivated landscapes of historical significance that are unique. (2) Verify that such landscapes are being protected. Determine if the installation includes cultural, architectural, or land monuments whose surrounding land is to be protected. Verify that any land surrounding such monuments that must be protected is in fact protected.

(1) Natural Resources Manager (or Environmental Coordinator) (2) Historic Preservation Officer (or Environmental Coordinator)

Table 4-1

Endangered and Threatened Plant and Animal Species

The species marked with an asterisk (*) are those species officially listed as threatened with extinction. The scientific designation of a species is normative for delimiting that species, and the species includes all the members of the levels of taxonomy under it.

Latin Name	German Common Name	English Common Name
	FAUNA	
MAMMALIA	SAEUGETIERE	MAMMALS
Alopex lagopus	Eisfuchs	ice (arctic, polar, stone) fox
Bradypus torquatus	Kragenfaultier	maned sloth
Bradypus tridactylus	Dreifingerfaultier	three-toed sloth
*Canis lupus	Wolf	wolf
Capra aegagrus	Bezoarziege	wild goat
Capra pyrenaica	Iberiensteinbock	Iberian goat
*Castor fiber	Biber	beaver
*Chiroptera spp.	Fledermaeuse	bat -all indigenous species
Chiroptera spp.	Fledermaeuse	bat -all European species not individually listed
Choloepus didactylus	Unau	two-toed sloth
Citellus citellus	Ziesel	common souslik
Cricetus cricetus	Europaeischer Feldhamster	European field hamster
Cystophora cristata	Klappmuetze	hooded seal
Dasypodidae spp.	Guerteltiere	armadillo
*Dryomys nitedula	Baumschlaefer	tree dormouse
Erignathus barbatus	Bartrobbe	bearded seal
Felidae	Katzen	cats
Galemys pyrenaicus	Pyrenaeen-Desman	Pyrenees desman
Gliridae spp.	Schlaefer	dormouse -all European species not individually listed
Gulo gulo	Vielfrass	glutton
Halichoerus grypus	Kegelrobbe	gray seal
Hystrix cristata	Stachelschwein	porcupine
Loxodonta africana	Afrikanischer Elephant	African elephant
*Mustela lutreola (Lutreola lutreola)	Europaeischer Wildnerz	European mink
*Microtus bavaricus	Bayerische Kleinwuehlmaus	Bavarian small vole
*Microtus oeconomus	Sumpfmaus	marsh vole
Odobenus rosmarus	Walross	walrus
Ovibos moschatus	Moschusochse	musk-ox

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
Phoca groenlandica (Pagophilus groenlandicus)	Sattelrobbe	harp seal
Pusa hispida	Ringelrobbe	ringed seal
Sciurus vulgaris	Eichhoernchen	squirrel
*Sicista betulina	Birkenmaus	birch mouse
*Sorex alpinus	Alpenspitzmaus	Alpine shrew
Soricidae spp.	Spitzmaeuse	shrew -all European species not individually listed
Talpa europaea	Europaeischer Maulwurf	European mole
Tamandua tetradactyla	Mittlerer Ameisenbaer	tamandua
*Ursus arctos	Braunbaer	brown bear
Genetta genetta	Ginsterkatze	European genet (berbe)
Mammalia spp.	Saeugetiere	Mammals -all native species not individually listed, EXCEPT:
Arvicola terrestris	Schermaus	watervole
Clethrionomys glareolus	Roetelmaus	bank vole
Microtus agrestis	Erdmaus	field vole, short-tailed field mouse
Microtus arvalis	Feldmaus	field vole
Mus musculus	Hausmaus	house mouse
Myocastor coypus	Nutria	nutria
Nyctereutes procyonoides	Marderhund	raccoon dog
Ondatra zibethica	Bisam	muskrat
Procyon lotor	Waschbaer	raccoon
Rattus norvegicus	Wanderratte	Norway rat
AVES	VOEGEL	BIRDS
*Acrocephalus arundinaceus	Drosselrohrsaenger	common sandpipter, summer snipe
*Acrocephalus paludicola	Seggenrohrsaenger	reed thrush, great reed warbler
*Actitis hypoleucos	Flussuferlaeufer	sedge warbler
*Aegolius funereus	Rauhfusskauz	rough foot owl
*Aegypius monachus	Moenchsgeier	black vulture
*Afropavo congensis	Kongopfau	Congo peacock
*Alca torda	Tordalk	razorbill, razorbilled auk
*Alcedo atthis	Eisvogel	kingfisher
*Alectoris barbara	Felsenhuhn	stone grouse
*Alectoris graeca saxatillis	Alpen-Steinhuhn	alpine rock partridge
*Alectoris rufa	Rothuhn	Guernsey or red-legged partridge
Amazona agilis	Rotspiegel-Amazone	red-mirror Amazona
Amazona collaria	Jamaika-Amazone	Jamaica Amazona
Amazona ventralis	Blaukronen-Amazone	blue-crown Amazona
Amazona xanthops	Gelbbauch-Amazone	yellow-belly Amazona

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
Anas clypeata	Loeffelente	shoveler
Anas querquedula	Knaekente	querquedule
Anodorhynchus hyacinthinus	Hyazinthara	Hyacinth ara
*Anser erythropus	Zwerggans	lesser white-fronted goose
*Anthorpoides virgo	Jungfernkranich	demoiselle
*Anthus bertheloti	Kanarenpieper	canary pipit
*Anthus campestris	Brachpieper	tawny pipit
Aplonis pelzelni	Pelzelnstar	cloak starling
Aplonis santovestris	Rotbuerzelstar	red-rumped starling
*Aquila chrysaetos	Steinadler	golden eagle
*Aquila pomarina	Schreiadler	lesser spotted eagle
Aratinga auricapilla auricapilla	Goldscheitelsittich	gold-headed parakeet
Aratinga cactorum	Kaktussittich	cactus parakeet
*Ardea purpurea	Purpurreiher	purple heron
*Ardeola ralloides	Rallenreiher	rail heron
*Arenaria interpres	Steinwaelzer	turnstone
*Asio flammeus	Sumpfohreule	short-eared owl
*Athene noctua	Steinkauz	little owlet
Aythya nyroca	Moorente	white-eyed duck
Balaeniceps rex	Schuhschnabel	shoebill
Botaurus stellaris	Rohrdommel	common bittern
Brotogeris tirica	Tirika-Sittich	tirica parakeet
*Bubo bubo	Uhu	eagle owl
Bucerotidae spp.	Nashornvoegel	rhinoceros bird -all species
*Burhinus oedicnemus	Triel	stone curlew
*Buteo rufinus	Adlerbussard	eagle buzzard
*Calandrella brachydactyla	Kurzzehenlerche	short-toed lark
*Calidris alpina	Alpenstrandlaeufer	dunlin (red-backed sandpiper)
*Calonectris diomedea	Gelbschnabelsturmtaucher	yellow-billed loon
*Caprimulugus europaeus	Ziegenmelker	mightjar
*Carduelis flammea	Birkenzeisig	mealy redpoll
*Carpodacus erythrinus	Karmingimpel	scarlet grosbeak
Cathartes aura	Truthahngeier	gallinazo, turkey buzzard
Cathartes burrovianus	Kleiner Gelbkopfgeier	lesser yellow-headed vulture
Cathartes melambrotus	Grosser Gelbkopfgeier	greater yellow-headed vulture
*Cettia cetti	Seidensaenger	silky warbler
*Chlidonias hybrida	Weissbartseeschwalbe	whiskered tern
*Chlidonias leucoptera	Weissfluegelseeschwalbe	white-winged tern
*Chlidonias niger	Trauerseeschwalbe	mourning tern
*Ciconia ciconia	Weissstorch	white stork
*Ciconia nigra	Schwarzstorch	black stork
*Circaetus gallicus	Schlangenadler	snake buzzard
*Circus cyaneus	Kornweihe	hen-harrier
*Circus macrourus	Steppenweihe	steppe harrier
*Circus pygarus	Wiesenweihe	Montagu's harrier

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
*Claravis godefrida	Purpurbindentaeubchen	purple-banded dove
Coenocorypha aucklandica	Aucklandschnepfe	Auckland snipe
Columba junoniae	Lorbeertaube	laurel pigeon
Columba trocaz	Silberhalstaube	silver-necked pigeon
*Copsychus sechellarum	Seychellendajal (Seychellen-Drossel)	Seychelle thrush
*Coracias garrulus	Blauracke	common roller
Coragyps atratus	Rabengeier	carrion crow, black vulture
*Corvus kubaryi	Guam-Kraehe	Guam crow
*Corvus tropicus	Hawaii-Kraehe	Hawaii crow
Crax alberti	Blaulappenhokko	blue-wattled guan
Crax fasciolata pinima	Nattererhokko	[chattering] guan
*Crex crex	Wachtelkoenig	corncrake, land rail
Cyanolimnas cerverai	Kuba-Ralle	Cuba rail
Cygnus columbianus	Zwergschwan	·gmy swan
*Cygnus cygnus	Singschwan	ıistling swan
*Cygnus melanocoryphus	Schwarzhalsschwan	black-necked swan
*Dendrocopos leucotos	Weissrueckenspecht	white-backed woodpecker
*Dendrocopos medius	Mittelspecht	middle spotted woodpecker
*Dendrocopos syriacus	Blutspecht	blood woodpecker
Didunculus strigirostris	Zahntaube	tooth-billed pigeon
Drepanoptila holosericea	Spaltschwingentaube	split-winged dove
*Dryocopus martius	Schwarzspecht	black woodpecker
Ducula auroae	Aurorafruchttaube	orange fruit dove
*Ducula galeata	Marquesfruchttaube	marquesa fruit dove
Ducula goliath	Riesenfruchttaube	greater fruit dove
*Egretta alba	Silberreiher	great white heron
Egretta eulophotes	Schneereiher (China-Seidenreiher)	Chinese little egret
*Egretta garzetta	Seidenreiher	great white heron
*Elanus caeruleus	Gleitaar	blackwinged kite
*Emberiza caesia	Grauer Ortolan	gray bunting
*Emberiza cia	Zippammer	rockbunting
*Emberiza cirius	Zaunammer	cirl bunting
*Emberiza hortulana	Ortolan	ortolan, bunting
*Eudromias morinellus	Mornellregenpfeifer	dottrel
*Falco biarmicus	Lanner	lanner
*Falco cherrug	Saker-Falke	Saker falcon
*Falco eleonorae	Eleonorenflake	Eleonor falcon
Cathartes melambrotus	Grosser Gelbkopfgeier	headed buzzard greater yellow-headed buzzard
*Ficedula albicollis	Halsbandschnaepper	collared flycatcher
*Ficedula parva	Zwergschnaepper	pygmy flycatcher
*Ficedula semitorquata	Halbringschnaepper	half-ring flycatcher
*Foudia flavicans	Rodriguezweber	Rodriguez weaver
*Foudia rubra	Mauritius-Weber	Mauritius weaver

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
Foudia sechellarum	Seychellen-Weber	Seychelle weaver
*Fratercula arctica	Papageitaucher	parrot grebe
Fringilla teydea	Teydefink	Teyde finch
Fulica cornuta	Ruesselblaesshuhn	snout coot
*Fulica cristata	Kammblaesshuhn	comb coot
*Fulmarus glacialis	Eissturmvogel	fulmar (petrel)
*Galerida theklae	Theklalerche	Thekla lark
Gallicolumba erythroptera	Tahiti-Taube	Tahiti pigeon
Gallicolumba rubescens	Marquesataube	Marquesa pigeon
*Gallinago media	Doppelschnepfe	great snipe
*Gavia immer	Eistaucher	common loon
*Gelochelidon nilotica	Lachseeschwalbe	Gold-billed tom
*Geronticus calvus	Glattnackenibis	smooth-necked ibis
*Glareola nordmanni	Schwarztfluegel-Brachschwalbe	black-winged collared pratincole
*Glareola pratincola	Rotfluegel-Brachschwalbe	red-winged collared pratincole
*Glaucidium passerinum	Sperlingskauz	pygmy owl
Gruidae spp.	Kraniche	cranes -all species not individually listed
*Grus grus	Kranich	crane
*Gypaetus barbatus	Bartgeier	bearded vulture
Gypopsitta vulturina	Kahlkopfpapagei	bald-headed parrot
*Gyps fulvus	Gaensegeier	Griffon vulture
*Haematopus chathamensis	Chatham-Austernfischer	Chatham's oyster-catcher
Haematopus moquini	Russ-Austernfischer	sooty oyster-catcher
*Hieraaetus fasciatus	Habichtsadler	hawk eagle
*Hieraaetus pennatus	Zwergadler	booted eagle
*Himantopus himantopus	Stelzenlaeufer	stilt
*Himantopus novaezelandiae	Neuseeland-Stelzenlaeufer	New Zealand stilt
*Hoplopterus spinosus	Spornkiebitz	spurred lapwing/plover (?)
*Hydrobates pelagicus	Sturmschwalbe	stormy petrel
*Hydroprogne caspia	Raubseeschwalbe	Caspian tern
*Ixobrychus minutus	Zwergdommel	little bittern
*Lanius collurio	Neuntoeter	red-backed shrike
*Lanius excubitor	Raubwuerger	great gray shrike
*Lanius minor	Schwarzstirnwuerger	black-headed shrike
*Lanius senator	Rotkopfwuerger	red-headed shrike
*Larus audouinii	Korallenmoewe	coral seagull
*Larus genei	Duennschnabelmoewe	thin-billed seagull
*Larus sabini	Schwalbenmoewe	swallow-tailed gull, Sabine's gull
Leptotila conoveri	Tolimataube	Tolima dove
Leptotila wellsi	Lorbeertaube (Grenadataube)	Grenada dove
*Locustella luscinioides	Rohrschwirl	cane warbler
Lophotibis cristata	Schopfibis (Madagaskar-Schopfibis)	tufted ibis

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
Lophura bulweri	Weissschwanzfasan	white-tailed pheasant
*Lullula arborea	Heidelerche	wood lark
*Luscinia svecica (Cyanosylvia svecica)	Blaukehlchen	bluethroat
*Lymnocryptes minimus	Zwergschnepfe	jacksnipe
Marmaronetta angustirostris	Marmelente	marble duck
Megapodius laperouse	Laperousehuhn (Dschungelhuhn)	Laperouse's hen
*Merops apiaster	Bienenfresser	bee-eater
Mesoenas unicolor	Einfarbstelzenralle	one-color stilt rail
*Milvus milvus	Rotmilan	red kite
Monias benschi	Moniasralle	Monias rail
*Monticola saxatilis	Steinroetel	rock thrush
Nannopterum harrisi	Galapagosscharbe	Galapagos cormorant
Nectariniidae spp.	Nektarvoegelartige	honeyeater, honeysucker, sugarbird -all species
*Nemosia rourei	Rubinkehltangare	red-throated tanager
*Neophron percnopterus	Schmutzgeier	Egyptian vulture
*Nesoenas mayeri	Mauritius-Taube	Mauritius pigeon
*Notornis mantelli	Takahe	takahe
*Numenius arquata	Grosser Brachvogel	common curlew
*Nyctea scandiaca	Schnee-Eule	snowy owl
*Nycticorax nycticorax	Nachtreiher	night heron
*Oceanodroma leucorhoa	Wellenlaeufer	Leach's petrel
*Odontophorus strophium1Kragenwachtel	collared quail	
*Otis tarda	Grosstrappe	great bustard
*Oxyura leucocephala	Weisskopfruderente	white-headed ruddy duck
Pandion haliaetus	Fischadler	fish eagle
*Pelecanus onocrotalus	Rosapelikan	pink pelican
*Penelope perspicax	Caucaguan	Caugaguan
*Petronia petronia	Steinsperling	stone sparrow
Phalacrocorax carunculatus	Warzenscharbe	warty cormorant
*Phalacrocorax pygmaeus	Zwergscharbe	dwarf or pigmy cormorant
*Phalaropus lobatus	Odinshuehnchen	Odin's chicken
*Philomachus pugnax	Kampflaeufer	common sandpiper
Phoenicopterus roseus	Flamingo	flamingo
*Picoides tridactylus	Dreizehenspecht	three-toed woodpecker
*Picus canus	Grauspecht	gray woodpecker
*Platalea leucorodia	Europaeischer Loeffler	European spoonbill
*Plegadis falcinellus	Braunsichler (Schreitvogel)	glossy ibis, falcinel
Ploceus golandi	Golandweber	Goland's weaver
*Pluvialis apricaria	Goldregenpfeifer	golden plover
*Podiceps andinus	Andentaucher	Andean grebe
*Podiceps auritus	Ohrentaucher	eared grebe
*Podiceps gallardoi	Kapuzentaucher	hooded grebe
*Podiceps grisegena	Rothalstaucher	red-necked grebe
*Podiceps nigricollis	Schwarzhalstaucher	black-necked grebe

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
*Porphyrio porphyrio	Purpurhuhn	purple partridge (?)
*Porzana parva	Kleines Sumpfhuhn	lesser crake
*Porzana prozana	Tuepfelsumpfhuhn	tufted crake
*Porzana pusillis	Zwergsumpfhuhn	dwarf crake
Proboscicer aterrimus	Palmkakadu	palm cockatoo
Prosobonia cancellatus	Suedseelaeufer	South Sea runner
Pseudibis davisoni	Borneo-Warzenibis	Borneo warty ibis
*Pterocles alchata	Spiessflughuhn	pin-tailed sandgrouse
*Pterocles orientalis	Sandflughuhn	sandgrouse
*Pterocles paradoxus	Steppenhuhn	Pallas's sandgrouse
Ptilinopus huttoni	Rapafruchttaube	Rapa fruit dove
*Ptyonoprogne rupestris	Felsenschwalbe	rock swallow, crag martin
*Pyrrhula pyrrhula murina	Azoren-Gimpel	Azores bullfinch
Pyrrhura hypoxantha salvadori	Gelbseitensittich	yellow-sided parakeet
Pyrrhura perlata	Blausteisssittich	blue-rump parakeet
Pyrrhura rhodogaster	Rothauchsittich	red-belly parakeet
Rallus owstoni	Guam-Ralle	Guam rail
*Rallus poecilopterus	Fidji-Ralle	Fiji rail
Rallus semiplumbeus	Bogata-Ralle	Bogota rail
Ramphastidae spp.	Tukane	toucans
*Recurvirostra avosetta	Saebelschnaebler	avocet
Rheinartia ocellata	Rheinartsfasan	Rheinart's pheasant
Rukia longirostria	Langschnabelbrillenvogel	lmg-tailed white-eye
*Rukia ruki	Trukbrillenvogel	Truk white-eye
Sarcoramphus papa	Koenigsgeier	king vulture
Saxicola dacotiae	Kanaren-Schmaetzer	canary passerines
Semnornis ramphastinus	Tukanbartvogel	toucan barbet
Serinus canaria	Kanaren-Girlitz	canary finch
*Serinus citrinella	Zitronengirlitz	citril finch
Sitta ledanti	Kabylen-Kleiber	Berber nuthatch
*Sitta whiteheadi	Korsenkleiber	Corsican nuthatch
*Spheniscus demersus	Brillenpinguin	jackass penguin
*Sterna albifrons	Zwergseeschwalbe	lesser or dwarf tern
*Sterna dougallii	Rosenseeschwalbe	rose or pink tern
*Sterna hirundo	Flussseeschwalbe	common tern
*Sterna paradisaea	Kuestenseeschwalbe	Arctic tern
*Sterna sandvicensis	Brandseeschwalbe	sandwich tern
Streptopelia turtur	Turteltaube	turtledove
Strigiformes spp.	Eulen	owls -all species not individually listed
*Strix uralensis	Habichtskauz	Ural owl
*Sylvia nisoria	Sperbergrasmuecke	sparrow hawk warbler
*Sylvia undata	Provencegrasmuecke	Provence warbler
Tachybaptus rufolavatus	Madagaskar-Zwergtaucher	Madagascar dabchick (little grebe)

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
*Tadorna ferruginea	Rostgans	rusty goose
Tangare fastuosa	Vielfarbentangare	many-color tanager
*Terpsiphone corvina	Seychellen-Paradiesschnaepper	Seychelle paradise flycatcher
*Tetrax tetrax	Zwergtrappe	little bustard
Thaumatibis gigantea	Riesenibis	great ibis
*Thinornis novaeseelandiae	Kapregenpfeifer (Neuseeland-Regenpfeifer)	Cape plover New Zealand plover
Tigrisoma fasciatum	Brasil-Tigerrohrdommel	Brazilian tiger bittern
Touit melanonota	Schwarzrueckenpapagei	black-spined parrot
Touit surda	Goldschwanzpapagei	gold-tail parrot
Triclaria malachitacea	Blaubauchpapagei	blue-belly parrot
*Tringa glareola	Bruchwasserlaeufer	wood sandpiper
*Tringa ochropus	Waldwasserlaeufer	wood sandpiper
*Tringa stagnatalis	Teichwasserlaeufer	green sandpiper
*Tringa totanus	Rotschenkel	redshank
Trochilidae spp.	Kolibris	hummingbirds
*Turdus iliacus	Rotdrossel	redwing
*Upupa epops	Wiedehopf	hoopoe
Uratelornis chimaera	Langschwanzerdracke	long-tailed ground roller
Vini peruviana	Saphir-Lori	sapphire lori
Vini ultramarina	Smaragd-Lori	emerald lori
Aves spp.	Voegel	birds -all European species not individually listed
Falconiformes spp.	Greifvoegel	falconiformes -all species not individually listed, EXCEPT:
Coragyps atratus	Rabengeier	carrion crow
Cathartes aura	Truthahngeier	turkey buzzard
Cathartes burrovianus	Kleiner Gelbkopfgeier	lesser yellow-headed buzzard
Cathartes melambrotus	Grosser Gelbkopfgeier	greater yellow-headed buzzard
REPTILIA	KRIECHTIERE	REPTILES
*Ablepharus kitaibelii	Johannisechse	ablepharus
*Algyroides marchi	Spanische Kieleidechse	Spanish sand runner
Amphibolurus spp.	Bartagamen	bearded lizards -all species
Aprasia parapulchella	Schmuckflossenfuss	plumed snake-lizard
Bradypodion spp.	Zwergchamaeleons	dwarf chameleon -all species
Caiman spp.	Krokodilkaimane,	spectacled alligator,
Cerberus rhynchops	Hundskopf-Wassertrugnatter	dog's head-homalopsine colubrid snake
	Brillenkaimane	spectacled caiman

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
*Chamaeleo chamaeleon	Gewoehnliches Chamaeleon	common chameleon
Chamaeleo spp.	Chamaeleons	*chameleons* -all species not individually listed
Chlamydosaurus kingii	Kragenechse	frilled lizard
Crocodilurus lacertinus	Krokodilschwanz-echse	crocodile-tail lizard
Crocodylus intermedius	Orinoko-Krokodil	Orinoco crocodile
Ctenotus lancelini	Lancelin-Streifenskink	Lancelin blue-tailed skink
*Coluber hippocrepis	Hufeisennatter	horseshoe snake
*Cyrtodactylus kotschyi	Aegaeischer Nacktfinger-gecko	Aegean naked-fingered gecko
Diplodactylus spp.	Australische Geckos	Australian geckos -all species
Dracaena guianensis	Krokodilteju	caiman lizard
Egernia spp.	Stachelskinke	spiny skinks -all species
*Elaphe longissima	Aeskulapnatter	Aesulapian snake
*Elaphe quatuorlineata	Vierstreifennatter	four-striped snake
*Elpahe situla	Leopardnatter	leopard snake
*Emys orbicularis	Europaeische Sumpfschildkroete	European pond turtle
Enhydris spp.	Choury-Schlangen	Choury snakes -all species
Eunectes spp.	Anakondas	anaconda
Gallotia atlantica	Atlantische Kanareneidechse	Atlantic canary lizard
Gallotia gallotia	Kanareneidechse	canary lizard
Gallotia stehlini	Riesen-Kanareneidechse	Hierro giant lizard
Gehyra australis	Australischer Hausgecko	Australian gecko
Geochelone yniphora	Madagassische Schnabel-brustschildkroete	Madagascar pointed-plastron toad
Homalopsis buccata	Boa -- Wassertrugnatter	boa -- homalopsine colubrid snakes
Iguana spp.	Gruene Leguane	green iguana
*Lacerta lepida	Perleidechse	eyed lizard
*Lacerta parva	Zwerg-Zauneidechse	dwarf sand lizard
*Lacerta princeps	Zagros-Eidechse	Zagros' lizard
*Lacerta viridis	Smaragdeidechse	green lizard
Lerista lineata	Australischer Skink	Australian skink
*Mauremys caspica	Spanische Sumpfschildkroete	Spanish pond turtle
Moloch horridus	Dornteufel	moloch
Naja naja	Brillenschlange	hooded snake
*Natrix tessellata	Wuerfelnatter	dice snake
Nephrurus spp.	Knopfschwanz-Geckos	button-tail geckos -all species
Oedura spp.	Samtgeckos	velvet geckos -all species
Ophidiocephalus taeniatus	Australischer Flossenfuss	Australian snake-lizards

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
Phrynosoma spp.	Kroetenechsen	horned toads -all species
Phrynosoma coronatum blainvillei	Texaskroetenechse	Texas horned toad
Phyllurus spp.	Blattschwanzgeckos	leaf-tailed geckos -all species
Physignathus lesueurii	Gewoehnlicher Wasserdrachen	common water dragon
*Podarcis filfolensis	Malta-Eidechse	Malta lizard
*Podarcis lilfordi	Baleareneidechse	Balearic toad
*Podarcis muralis	Maereidechse	wall lizard
*Podarcis pityusensis	Pityuseneidechse	Pityusen toad
*Podarcis sicula	Ruinen-Eidechse	ruins lizard
Pseudemoia palfreymani	Australischer Skink	Australian skink
Terrapene spp.	Dosenschildkroeten	box tortoises, box turtles -all species
*Testudo graeca	Maurische Landschildkroete	Moorish tortoise
*Testudo hermanni	Griechische Landschildkroete	Greek tortoise
Testudo horsfieldii	Vierzehen-Landschildkroete	Horsefield's tortoise
*Testudo marginata	Breitrandschildkroete	broad-brimmed turtle
Tiliqua spp.	Blauzungenskinke	blue-tongued skinks -all species
Trachydosaurus rugosus	Tannenzapfenechse	fir cone lizard
Tupinambis spp.	Grosstejus	great teju
Underwoodisaurus spp.	Ruebenschwanzgeckos	red-tailed geckos -all species
Vermicella annulata	Australische Giftnatter	Australian poisonous snake (viper)
*Vipera ammodytes	Sandotter	sand viper
*Vipera aspis	Aspisviper	aspic viper
*Vipera berus	Kreuzotter	adder, northern viper
*Vipera kaznakovi	Caucasus adder	
*Vipera latasti	Stuelpnasenotter	snub-nosed adder
*Vipera lebetina	Levante-Otter	Lebanon adder
Vipera russellii	Kettenviper	Russell's viper
Vipera ursinii	Wiesenotter	field adder
*Vipera xanthina	Bergotter	mountain adder
Xenochrophis piscator (Natrix piscator)	Fischnatter	fish adder
Reptilia spp.	Kriechtiere	Reptiles -all European species not individually listed

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
AMPHIBIA	LURCHE	AMPHIBIANS
*Alytes cisternasii	Iberische Geburtshelferkroete	Iberian midwife toad, frog
*Alytes muletensis (Baleaphryne muletensis)	Balearenkroete	Balearan toad
*Alytes obstetricans	Geburtshelferkroete	midwife toad
Bombina bombina	Rotbauchunke	red-bellied toad
Bombina fortinuptialis		
Bombina maxima	Riesenunke	giant toad
Bombina microdeladigitora		
Bombina orientalis	Chinesische Rotbauchunke	Chinese red-bellied toad
*Bombina variegata	Gelbbauchunke	yellow-bellied toad
*Bufo calamita	Kreuzkroete	natterjack, running toad
*Bufo viridis	Wechselkroete	Vistula toad
*Chioglossa lusitanica	Goldstreifensalamander	gold-striped salamander
Dendrobates spp.	Baumsteigerfroesche	tree frogs
*Hyla arborea	Laubfrosch	tree frog
*Pelobates cultripes	Messerfuss	spadefoot frog
*Pelobates fuscus	Knoblauchkroete	garlic toad, spadefoot toad
Phyllobates spp.	Blattsteigerfroesche	leaf frogs
*Proteus anguinus	Grottenolm	cave salamander
*Rana arvalis	Moorfrosch	marsh frog
*Rana dalmatina	Springfrosch	agile frog
Rana hexadactyla	Sechszehenfrosch	six-toed frog
*Rana latastei	Italienischer Springfrosch	Italian agile frog
Rana tigerina	Asiatischer Ochsenfrosch	Asiatic bullfrog
*Salamandra luschani	Lyzischer Salamander	? salamander
*Salamandrina terdigitata	Brillensalamander	tarantolin
*Triturus cristatus	Kammolch	crested newt
Amphibia spp.	Lurche	Amphibians -all European species not individually listed
Rana spp. excl. Rana catesbeiana	Eigentliche Froesche	true frogs -all non-European species, EXCEPT: the American bullfrog
PISCES ET CYCLOSTOMATA	FISCHE UND RUNDMAEULER	FISH AND CYCLOSTOMATES
Acipenser sturio	Baltischer Stoer	Baltic sturgeon
Chaetodontidae spp.	Borstenzaehner	butterfly fish -all species

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
Petromyzontidae spp.	Rundmaeuler	cyclostomatis -all native species
Pomacanthidae spp.	Engelfische	angelfish -all species
Zanclidae spp.	Halfterfische	halter fish -all species
ECHINODERMATA	STACHELHAEUTER	ECHINODERMS
Echinus esculentus	Essbarer Seeigel	edible sea urchin
Solaster papposus	Sonnenstern	sun star
INSECTA	INSEKTEN	INSECTS
Odonata	Libellen	dragonflies
*Aeshna coerulea	Alpen-Mosaikjungfer	alpine mosaic dragonfly
*Aeshna viridis	Gruene Mosaikjungfer	green mosaic dragonfly
*Ceriagrion tenellum	Spaete Adonislibelle	late adonis dragonfly
*Coenagrion armatum	Hauben-Azurjungfer	hooded azure dragonfly
*Coenagrion hylas	Sibirische Azurjungfer	Siberian azure dragonfly
*Coenagrion mercuriale	Helm-Azurjungfer	crested azure dragonfly
*Coenagrion ornatum	Vogel-Azurjungfer	bird (or large) azure dragonfly
*Cordulegaster bidentata	Gestreifte Quelljungfer	striped spring dragonfly
*Epitheca bimaculata	Zweifleck	two spot
*Gomphus flavipes	Asiatische Keiljungfer	Asiatic meadow dragonfly
*Gomphus simillimus	Gelbe Keiljungfer	yellow meadow dragonfly
*Gomphus vulgatissimus	Gemeine Keiljungfer	common meadow dragonfly
*Leucorrhinia albifrons	Oestliche Moosjungfer	eastern moss dragonfly
*Leucorrhinia caudalis	Zierliche Moosjungfer	ornamental moss dragonfly
*Onychogomphus uncatus	Grosse Zangenlibelle	greater pincer dragonfly
*Ophiogomophus serpentinus	Gruene Keiljungfer	green meadow dragonfly
*Orthetrum brunneum	Suedlicher Blaupfeil	souther blue arrow
Odonata spp.	Libellen	dragonflies -all native species not individually listed
MANTODEA	FANGHEUSCHRECKEN	MANTIDS
*Mantis religiosa	Gottesanbeterin	praying mantis
SALTATORIA	SPRINGHEUSCHRECKEN	JUMPING GRASSHOPPERS
*Aiolopus thalassinus	Gruene Strandschrecke	green strand grasshopper
*Arcyptera fusca	Pallas'Hoeckerschrecke	Pallas' hump grasshopper
*Arcyptera microptera	Kleine Hoeckerschrecke	lesser hump grasshopper

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
*Bryodema tuberculata	Gefleckte Schnarrschrecke	spotted locust
*Calliptamus italicus	Italienische Schoenschrecke	Italian ornamental locust
*Ephippiger ephippiger	Steppen-Sattelschrecke	steppe saddle locust
*Gampsocleis glabra	Heideschrecke	heath locust
*Metrioptera saussureina	Gebirgsbeissschrecke	mountain biting locust
Oecanthus pellucens	Weinhaehnchen	vinyard locust
Oedipoda caerulescens	Blaufluegelige Oedlandschrecke	blue-winged wilderness locust
Oedipoda germanica	Rotfluegelige Oedlandschrecke	red-winged wilderness locust
*Platycleis tessellata	Braunfleckige Beissschrecke	brown-winged biting locust
Psophus stridulus	Rotfluegelige Schnarrschrecke	red-winged locusts
*Ruspolia nitidula	Gemeine Schiefkopfschrecke	common slant-headed locust
Sphingonotus caerulans	Blaufluegelige Sandschrecke	blue-winged sand locust
RHYNCHOTA	SCHNABELKERFEN	RHYNCHOTA, HEMIPTERA
Cicadetta montana	Bergzikade	mountain cicada
Tibicina haematodes	Blutrote Singzikade	blood-red singing cicada, leafhopper
PLANIPENNIA	ECHTE NETZFLUEGLER	TRUE NEUROSTERA
Ascalaphidae spp.	Schmetterlingshafte	ascalaphids -all European species not individually listed
*Dendroleon pantherinus	Panther-Ameisenjungfer	panther ant lion
*Distoleon tetragrammicus	Langfuehlerige Ameisenjungfer	long antennae ant lion
*Libelloides coccajus (Ascalaphus libelluloides)	Libellen-Schmetterlingshaft	dragonfly ascalaphid
*Libelloides longicornis (Ascalaphs longicornis)	Langfuehlerige Schmetterlingshaft	long antennae ascalaphid
*Mantispa styriaca	Steirischer Fanghaft	Styrian mantis
*Myrmeleon bore	Duenen-Ameisenjungfer	dune ant lion
Myrmeleonidae spp.	Ameisenjungfer	ant lions -all European species not individually listed
*Acmaeodera degener	18-fleckiger Ohnschildprachtkaefer	18-spotted unshielded metallic beetle
*Aesalus scarabaeoides	Kurzschroeter	short stag beetle

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
COLEOPTERA	KAEFER	BEETLES
Aromia moschata	Moschusbock	musk beetle oak beetle
Agrilus viridis	Buchenprachtkaefer (Laubholzprachtkaefer)	beech beetle deciduous tree beetles
Anthaxia quadripunctata	Vierpunkt-Kiefernprachtkaefer	4-spotted pine beetle
Chrysobothris affinis	Goldgruben-Eichenprachtkaefer	goldmine pine beetle
Phaenops cyanea	Blauer Kiefernprachtkaefer	blue pine beetle
*Buprestis novemmaculata	Gefleckter Nadelholzprachtkiefer	spotted conifer beetle
*Buprestis splendens	Godlstreifiger Prachtkaefer	gold-stripped metallic beetle
*Calosoma auropunctatum	Goldpunkt-Puppenraeuber	gold-spotted pupa robber
*Calosoma reticulatum	Smaragdgruener Puppenraeuber	emerald green pupa robber
Calosoma spp.	Puppenraeuber	pupa robbers -all European species not individually listed
*Carabus clathratus	Ufer-Laufkaefer	shoreline ground beetle
*Carabus menetriesi	Waldmoor-Laufkaefer	forested marsh ground beetle
*Carabus nitens	Heide-Laufkaefer	heath ground beetle
*Carabus variolosus	Schwarzer Grubenkaefer	black pit beetle
Carabus spp.	Grosslaufkaefer	great ground beetles -all native species not individually listed
*Cerambyx cerdo	Heidbock (Grosser Eichenbock)	cerambyad (greater oak beetle)
Cerambyx scopolii	Kleiner Eichenbock	lesser oak beetle
Cetonia aurata	Rosenkaefer	rose chafer
*Cicindela arenaria	Wiener Sandlaufkaefer	Viennese tiger beetle
Cicindela spp.	Sandlaufkaefer	tiger beetles -all European species not individually listed
*Clerus mutillarius	Eichen-Buntkaefer	oak robber beetle
Copris lunaris	Mondhornkaefer	dung beetle
*Dicerca furcata (acuminata)	Scharfzaehniger Zahnfluegelprachtkaefer	black- toothed tooth-winged beetle
*Dicerca moesta	Linienhalsiger Zahnfluegelprachtkaefer	spotted nick tooth-winged beetle
Dorcadion fuliginator	Erdbock	ground beetle
*Dytiscus latissimus	Breitrand	diving beetle
Ergates faber	Mulmbock	wood beetle
*Eurythyrea austriaca	Gruenglaenzender Glanz- Prachtkaefer	green iridescent beetle

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
*Eurythyrea quercus	Eckschild-Glanz-Prachtkaefer	square shield iridescent beetle
Gaurotes excellens	Geissblattbock	honeysuckle beetle
*Gnorimus nobilis	Gruener Edelscharrkaefer	green burrowing beetle
	Gnorimus octopunctatus Edelscharrkaefer	Veraenderlicher iridescent burrowing beetle
Hydrous spp.	Kolbenwasserkaefer	water scavenger beetles all native species
Lamia textor	Schwarzer Weberbock	black weaver beetle
Liocola lugubris	Marmorierter Goldkaefer	marbled rose chafer
Lucanidae spp.	Hirschkaefer	stag beetles -all European species not individually listed
*Megopis scabricornis	Koernerbock	corn beetle
*Melanophila picta	Gefleckter Zahnrand-Prachtkaefer	spotted tooth-legged metallic beetle
*Meloe autumnalis	Blauschimmernder Maiwurmkaefer	blue iridescent oil beetle
*Meloe cicatricosus	Narbiger Maiwurmkaefer	scarred oil beetle
*Meloe coriarius	Glaenzendschwarzer Maiwurmkaefer	glossy black oil beetle
*Meloe decorus	Violetthalsiger Maiwurmkaefer	violet-necked oil beetle
*Meloe hungarus	Gelbrandiger Maiwurmkaefer	
*Meloe rugosus	Mattschwarzer Maiwurmkaefer	dull black oil beetle
*Meloe variegatus	Bunter Oelkaefer	variegated oil beetle
*Melos spp.	Oelkaefer	oil beetles -all native species not individually listed
*Necydalis major	Grosser Wespenbock	greater wasp cerambyx
Oryctes nasicornis	Nashornkaefer	rhinoceros beetle
Osmoderma eremita	Eremit	hermit
*Phytoecia nigripes	Schwarzfuessiger Walzenhalsbock	black-footed roll-necked beetles
*Phytoecia rubropunctata	Rotpunktierter Walzenhalsbock	red-spotted roll-necked beetles
*Phytoecia uncinata	Wachsblumenboeckchen	wax flower beetle
Phytoecia spp.	Walzenhalsboecke	roll-necked beetles -all European species not individually listed
Polyphylla fullo	Walker	June beetle
*Potosia aeruginosa	Grosser Goldkaefer	greater rose chafer
Potosia spp.	Goldkaefer	rose chafer, rose beetles -all European species not individually listed
*Purpuricenus kaehleri	Purpurbock	purple beetle
*Rosalia alpina	Alpenbock	alpine beetle

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
Sitaris muralis	Schmalfluegliger Pelzbienen oelkaefer	narrow-winged potter flower beetle
*Tragosoma depsarium	Zottelbock	wool beetle
Trichodes alvearius	Zottiger Bienenkaefer	wooly clerid
Trichodes apiarius	Gemeiner Bienenkaefer	common clerid
*Trichodes ircutensis	Sibirischer Bienenkaefer	Siberian clerid
Typhoeus typhoeus	Stierkaefer	steer beetle
Buprestidae spp.	Prachtkaefer	metallic beetle -all European species not individually listed, EXCEPT:
Agrilus ater (sexguttatus)	Pappelprachtkaefer	poplar metallic beetle
Agrilus biguttatus	Zweipunktiger Eichenprachtkaefer	2-spotted
HYMENOPTERA	HAUTFLUEGLER	HYMENOPTERANS
Apoidea spp.	Bienen und Hummeln	bees and bumble bees -all native species
*Bembix integra	Kurzfluegelige Kreiselwespe	short-winged spinning wasps
Bembix spp.	Kreiselwespen	spinning wasps -all native species not individually listed
*Cimbex quadrimaculata	Weissdorn-Keulhorn-blattwespe	white-stinger club-horned wasp
Cimbex spp.	Knopfhornwespen	button-horned wasp -all native species not individually listed
Formica aquilonia	Alpenwaldameise	alpine forest ant
Formica exsecta	Grosse Kerbameise	greater notch ant
Formica foreli Formica lugubris Formica nigricans	Gebirgs-Waldameise	mountain forest ant
Formica polyctena Formica pratensis	Kahlrueckige Waldameise	plain-backed forest ant
Formica pressilabris	Furchenlippige Kerbameise	furrow-lipped notch ant
Formica rufa	Rote Waldameise	red forest ant
Formica sanguinea	Blutrote Raubameise	blood-red ant
Formica truncorum	Strunkameise	stump ant
Formica uralensis	Uralameise	Ural ant
*Scolia quadripunctata	Vierfleck-Dolchwespe	4-spotted dagger wasp
Vespa crabro	Hornisse	hornet

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
LEPIDOPTERA	SCHMETTERLINGE	BUTTERFLIES
Abraxas sylvata	Ulmen-Fleckenspanner	elm spotted geometer
*Acanthobrahmaea europaea	Europaeischer Brahmaeaspinner	European Brahman silkworm moth
*Acosmetia caliginosa	Scharteneule	notched owlet moth
*Aedia funesta	Windeneule	bindweed owlet moth
Aglia tau	Nagelfleck	tair
*Agrochola laevis	Graue Wollschenkeleule	gray wool-legged owlet moth
Agrotis ripae	Strand-Erdeule	strand-ground owlet moth
*Agrotis trux	Steppenheiden-Erdeule	steppe-heath ground owlet moth
Allancastria cerisyi	Oestlicher Osterluzeifalter	eastern hollowroot or birthwort butterfly
*Ammobiota festiva	Englischer Baer	English tiger moth
Ammoconia senex	Mittelrheintal-Graseule	Middle Rhine Valley antler moth
*Amphipyra livida	Schwarze Hochglanzeule	black brilliant owlet moth
Amphipyra perflua	Gesaeumte Glanzeule	fringed glossy owlet moth
Anarta cordigera	Moorbunteule	spotted marsh owlet moth
Anarta myrtilli	Heidekrauteulchen	little heather owlet moth
Anthocharis cardamines	Aurorafalter	orange-tip
Anthocharis damone	Goldfleck-Aurorafalter	gold-spotted orange-tip
Apatura spp.	Schillerfalter	purple emperor -all European species
*Apamea aquila	Pfeifengras-Trauereule	moor grass weeping or mourning moth
Apamea oblonga	Auen-Graswurzeleule	meadow couch grass moth
*Apamea pabulatricula	Weissgraue Graseule	whitish gray antler moth
Apamea platinea	Platineule	platinum moth
Apamea rubrirena	Hartgraseule	hard grass moth
Apeira syringaria	Geissblatt-Buntspanner	honeysuckle spotted geomoeter
Apharitis acamas	Goldfluegel-Feuerfalter	gold-winged copper
Apharitis maxima		
*Aporophyla lueneburgensis	Hellgraue Heideblumeneule	light gray heath flower moth
Aporophyla lutulenta	Graue Glattrueckeneule	gray smooth-backed moth
Aporophyla nigra	Schwarze Glattrueckeneule	black smooth-backed moth
Archiearis notha	Mittleres Jungfernkind	middle damselfly
Archiearis parthenias	Grosses Jungfernkind	greater damselfly
Archon apollinus	Insel-Apollo	island Apollo (butterfly)

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
*Arctia villica	Schwarzer Baer	black tiger moth
Arctia spp.	Baeren	tiger moths -all European species not individually listed
*Arethusana arethusa	Rotbindiger Samtfalter	red-banded velvet butterfly
Argynnis paphia	Kaisermantel,	silver-washed Silberstrich
Argyronome laodice	Gruenlicher Perlmutterfalter	greenish silverspot, fritillary
Arichanna melanaria	Rauschbeeren-Flecken-spanner	bog bilberry spotted geometer
Aricia crassipuncta		
Aricia taberdiana		
*Artiora evonymaria	Pfaffenhuetchen-Wellrand-spanner	spindle tree wavy-edged geometer
Artogeia ergane	Berg-Weissling	mountain white
Artogeia krueperi	Kruepers Weissling	Krueper's white
Artogeia manni	Mannis Weissling	Manni's white
Aspilates formosaria	Wiesenmoor-Buntspanner	meadow marsh spotted geometer
Baptria tibiale	Trauerspanner	mourning geometer
*Boloria aquilonaris	Moosbeeren-Scheckenfalter	cranberry dappled butterfly
Boloria spp.	Perlmutterfalter	silverspot, fritillary -all European species not individually listed
*Brenthis daphne	Brombeer-Perlmutter-falter	blackberry fritillary
Brenthis hecate	Saumfleck-Perlmutter-falter	spotted fringe fritillary
Brenthis ino	Feuchtwiesen-Perlmutterfalter	swamp fritillary
Brintesia circe	Weisser Waldportier	white oak velvet
Calamia tridens	Grueneule	green owlet moth
Callimorpha spp.	Schoenbaer und Spanische Flagge	cinnabar and Spanish flag -all European species not individually listed
Callophrys mystaphia		
Callophrys suaveola		
*Callopistria juventina	Adlerfarneule	bracken owlet moth
Carcharodus alceae	Kleiner Malvendickkopf-falter	lesser grizzled skipper
Carcharodus boeticus	Andorn-Dickkopf-falter	Hoarhound skipper
*Carcharodus flocciferus	Eibischfalter	hibiscus skipper
*Carcharodus lavatherae	Ziest-Dickkopf-falter	woundwort skipper

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
*Carsia sororiata	Moosbeeren-Grauspanner	bogberry gray geometer
*Carterocephalus silvicolus	Schwarzfleckiger Golddickkopf	black-spotted gold skipper
Catephia alchymista	Weisses Ordensband	white underwing
*Catocala pacta	Bruchweidenkarmin	brittle willow carmine
Catocala spp.	Ordensbaender	underwings -all European species not individually listed
Celaena haworthii	Haworths Wieseneule	Haworth's meadow moth
Cerura spp.	Hermelinspinner und Grosser Gabelschwanz	puss moth and greater forktail -all European species
Charaxes jasius	Erdbeerbaumfalter	strawberry tree moth
Chazara bischoffi	Bischoffs-Augenfalter	Bischoff's satyr
Chazara briseis	Blaugras-Augenfalter	bluegrass satyr
Chazara persephone		
*Chelis maculosa	Fleckenbaer	spotted tiger moth
*Chondrosoma fiduciaria		
Clossiana spp.	Perlmutterfalter	fritillary -all European species
*Coenonympha oedippus	Moor-Wiesen-voegelchen	bog-meadow chick moth
Coenonympha spp.	Wiesenvoegelchen	meadow chick moth -all European species not individually listed
*Colias palaeno	Hochmoorgelbling	high marsh sulfur
Colias spp.	Heufalter und Moorgelbling	clouded sulfur and meadow sulfur -all European species not individually listed
*Conistra fragariae	Erdbeereule	strawberry moth
*Conistra veronicae	Rotbraune Wintereule	red-brown winter moth
Conscinia cribraria	Weisser Grasbaer	white feathered footman
Cosmia diffinis	Weissflecken-Ulmeneule	white-spotted elm moth
*Crocallis tusciaria	Waldreben-Schmuckspanner	clematis
*Cucullia argentea	Silbermoench	silver hooded moth
*Cucullia thapsiphaga	Koenigskerzen-Braunmoench	mullein brown hooded moth
Cucullia spp.	Moencheulenfalter	hooded owlet moth -all European species not individually listed
Cymbalophora pudica		
*Dasychira abietis	Tannenstreckfuss	fir stretch-foot
Dasypolia templi	Graugelbe Rauhhaareule	gray-yellow wire-haired shaggy moth
*Deltote candidula	Ampfer-Grasmotteneulchen	dock or sorrel webworm
Dichrysia chryson	Goldfleck-Wasserdosteule	gold-flecked hemp agrimony moth

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
*Diacrisia metelkana	Metelkanabaer	metelkana tiger moth
Diarsia dahlii	Dahls Moorheideneule	Dahl's marsh heather moth
*Dicycla oo	Eichen-Nulleneule	oak null moth
Dolbina elegans		
Drymonia spp.	Eichenbuschspinner	oak shrub silworm moth
		-all European species
Dysauxes ancilla	Braunes Fleckwidderchen	brown-spotted forester
*Dyscia fagaria	Heidekraut-Fleckenspanner	heather spotted geometer
Dyscia spp.		-all European species not individually listed
Dyspessa ulula	Lauchzwiebelbohrer	onion borer
Elphinstonia charlonia	Gelber Aurorafalter	yellow orange tip
Endromis versicolora	Scheckfluegel, Fruehlings-Birkenspinner	dapple-winged spring Kentish glory
Ephesia fulminea	Gelbes Ordensband	yellow underwing
Epilecta linogrisea	Silbergraue Bandeule	silver-gray underwing, cutworm, or dart moth
*Epirranthis diversata	Bunter Espen-Fruehlingsspanner	dappled Aspen spring geometer
Episema glaucina	Graslilien-Zwiebeleule	lily spiderwort onion moth
*Erebia phegea		
Erebia spp.	Mohrenfalter	carrot moth -all European species not individually listed
Eremobia ochroleuca	Ockerfarbene Queckeneule	ocher quick grass moth
*Eriogaster catax	Heckenwollafter	small hedge eggar
*Eriogaster rimicola	Eichenwollafter	small oak eggar
Eriopygodes imbecilla	Braune Berggraseule	brown mountain antler moth
Euapatura mirza		
Eucarta amethystina	Amethysteule	amethyst moth
Euchalcia modesta	Lungenkraut-Silbereuele	lungwort silver moth
Euchalcia variablilis	Olivengruene Eisenhut-Hoeckereule	olive green monkshood hump moth
Eucharia casta (deserta)	Labkrautbaer	bedstraw tiger moth
Euchloe charlonia		
Eudia pavonia	Kleines Nachtpfauenauge	emperor moth
Eumera regina		
Eugraphe subrosea	Rotbraune Torfmooreule	red-brown pear bog moth
Eupithecia breviculata	Haarstrang-Bluetenspanner	hogsfennel or sulfurweed flower geometer
Eupithecia impurata	Gebaenderter Glockenblumen-Bluetenspanner	banded bellflower geometer
Eurodryas aurinia	Skabiosen-Scheckenfalter	star head dappled moth

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
Eurodryas desfontainii	Knautien-Scheckenfalter	knautia dappled moth
*Euxoa lidia	Schwaerzliche Erdeule	darkling ground moth
Euxoa vitta	Sandrasen-Erdeule	sand moth
Exaereta ulmi	Ulmenspinner	elm silkworm moth
Fabriciana spp.	Perlmutterfalterarten	fritillaries -all European species
*Fagivorina arenaria	Rotbuchen-Rindenflechtenspanner	red beech spotted bark moth
Fixsenia lederi		
Furcula spp.	Gabelschwanzarten	puss moths -all European species
Gastropacha spp.	Kupferglucke und Pappelglucke	oak lappet and poplar lappet
Gonepteryx cleopatra cleobule	Kanarischer Zitronenfalter	canary brimstone butterfly
Gonepteryx cleopatra palmae	Las Palmas-Zitronenfalter	Las Palmas brimstone butterfly
Gonepteryx farinosa	Balkan-Zitronenfalter	Balkan brimstone butterfly
*Gortyna borelii	Haarstrangwurzeleule	sulfurweed root moth
*Graellsia isabellae	Isabellaspinner	Isabella silkworm moth
Grammia cervini	Matterhornbaer	Matterhorn tiger moth
Grammia quenselii	Quenselis Alpenbaer	Quenseli's alpine tiger moth
*Griposia aeruginea	Dunkelgraue Eicheule	dark gray oak moth
Griposia aprilina	Aprileule (Gruene Eicheneule)	April moth (green oak moth)
Gynaephora selentica	Mondfleck-Buerstenspinner	buff-tipped tussock moth
Hadena irregularis	Gipskraut-Kapseleule	gypsophila capsule moth
Hamearis lucina	Perlbinde (Brauner Wuerfelfalter)	pearl band (brown cube moth)
Heliophobus texturata	Tragant-Steppenheideneule	tragacanth steppe heath moth
*Heliothis maritima	Schuppenmieren-Blueteneule	scaley chickweed flower moth
Hemaris spp.	Schwaermer	hawkmoth -all European species
Heteropterus morpheus	Spiegelfleck-Dickkopffalter	mirror-spotted skipper
*Hipparchia alcyone	Kleiner Waldportier	lesser oak velvet
*Hipparchia statilinus	Eisenfarbener Samtfalter	iron-colored seed moth
Hipparchia spp.	Samtfalter, Waldportier	seedmoth, oak velvet -all European species not individually listed
Hyboma strigosa	Laubgebuesch-Striemeneule	shrub leaf weal moth
Hyles spp.	Schwaermer	hawkmoth, sphynxmoth -all European species

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
Hyphoraia aulica	Hofdame, Baerenspinner	royal lady, tiger moth -all European species
Hypodryas maturna	Kleiner Maivogel	lesser checkerspot
*Hypogymna morio	Trauerspinner	mourning silkworm moth
Hyponephele kocaki	Kocaks Ochsenauge	Kocak's peacock butterfly
Hyponephele lycaon	Kleines Ochsenauge	lesser peacock butterfly
Iphiclides podarlirius	Segelfalter	swallowtail
Issoria lathonia	Kleiner Perlmutterfalter	lesser fritillary
Jodia croceago	Eichen-Safraneule	oak saffron moth
*Jordanita chloros	Kupferglanz-Gruenwidderchen	copper glance green forester
Kirinia climene		
Kirinia roxelana		
Kretania eurypilus		
Kretaina psylorita	Kretischer Blaeuling	Cretan blue
*Laelia coenosa	Gelbbein	yellow leg
Lamprosticta culta	Obsthaineule	fruit wood moth
Lamprotes c-aureum	Goldenes C, Wiesenrauten-C-Eule	golden anglewing meadow rue angle moth
Lasiommata spp.	Braunauge, Mauerfuchs	brown eye, wall brown -all European species
*Lemonia taraxaci	Loewenzahnspinner	dandelion silkworm moth
*Lemonia spp.		-all European species not individually listed
Leptidea morsei	Fentons Weissling	Fenton's white
Leptidea sinapis	Senfweissling	mustard white
Libythea celtis	Zuergelbaum-Schnauzenfalter	hackberry snout butterfly
Limenitis spp.	Eisvoegel	viceroy -all European species
*Lithophane lamda	Sumpfporst-Rindeneule	marsh tea bark moth
Lithophane spp.	Rindeulen	viceroy -all European species
Lopinga achine	Gelbringfalter	yellow ring moth
Luperina nickerlii	Nickerlis Graswurzeleule	Nickerli's grass root moth
Luperina pozzi	Pozzis Graswurzeleule	Pozzi's grass root moth
*Lycaena dispar	Flussampfer-Dukatenfalter	water dock copper
*Lycaena helle	Blauschillernder Feuerfalter	blue shimmer copper
Lycaenidae spp.	Blaeulinge	blues -all European species not individually listed
*Lycia isabellae	Isabellaspanner	Isabella geometer
Lycia zonaria	Trockenrasen-Spinnerspanner	desert spinner geometer
Lycophotia molothina	Graue Besenheideeule	gray heather moth
Lysandra caucasica	Kaukasus-Blaeuling	Caucasus blue
Lythria purpuraria	Vogelknoeterich-Purpurbindenspanner	knotgrass purple-banded geometer

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
Macroglossum croaticum	Kroatischer Taubenschwanz	Croatian dove's tail
*Maculinea alcon	Kleiner Moorblaeuling	lesser marsh blue
*Maculinea arion	Schwarzfleckiger Blaeuling	black-spotted blue
*Maculinea Nausithous	Schwarzblauer Moorblaeuling	blue-black marsh blue
*Maculinea rebeli	Rebels Enzianblaeuling	Rebel's gentian blue
*Malacosoma franconica	Frankfurter Ringelspinner	Frankfurt lackey moth, tent caterpillar
Mamestra splendens	Rote Mooreule	red marsh moth
Maniola nurag	Sardisches Ochsenauge	Sardinian peacock butterfly
*Meganephria bimaculosa	Zweifleckige Plumpeule	two-spotted plump moth
Melanargia spp.	Schachbrettfalter	checkered butterfly -all European species
Melitaea spp.	Scheckenfalter	dappled butterfly -all European species
Mellicta spp.	Scheckenfalter	dappled butterfly
*Menophra abruptaria	Lederbrauner Fliederspanner	leather-brown lilac geometer
Mesoacidalia aglaja	Grosser Perlmutterfalter	greater frittilary
Mesogona acetosellae	Eichenbuschwald-Winkeleule	oak angle moth
Mesogona oxalina	Auenwald-Winkeleule	meadow angle moth
Minois dryas	Blauaeugiger Waldportier	blue-eyed oak velvet
Minucia lunaris	Mondeule, Braunes Ordensband	luna north, brown underwing
Mormo maura	Schwarzes Ordensband	black underwing
*Muschampia cribrellum	Steppen-Dickkopffalter	steppe skipper
*Muschampia tessellum	checkered skipper	
Mythimna favicolor	Salzwiesen-Graseule	salt meadow antler moth
*Narraga fasciolaria	Beifuss-Baenderspanner	artemisia banded geometer
Neolysandra coelestina	Coelestin-Blaeuling	Coelestine blue
Neptis sappho	Schwarzbrauner Trauerfalter	black-brown mourning butterfly
Nordmannia armena Nordmannia marcidus Nordmannia sassanides	Armenischer Zipfelfalter	Armenian horned butterfly
Nymphalis spp.		-all European species
*Ochropleura praecox	Gruene Beifuss-Erdeule	green artemisia ground moth
*Oceneria detrita	Russspinner	sooty silkworm moth
*Oceneria rubea	Rostspinner	rusty silkworm
Ocnogyna spp.		-all European species
Odonestis pruni	Pflaumenglucke, Feuerglucke	plum or fire lappet
*Odontognophos dumetata	Kreuzdorn-Grossspanner	buckthorn great geometer
Oeneis glacialis	Alpensamtfalter	alpine velvet
*Orgyia ericae	Heidenbuerstenspinner	heather tussock moth

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
Orgyia gonostigma	Eckfleck	corner spot
Orthosia opima	Moorheiden-Fruehlingseule	marsh heather spring moth
Pachypasa otus	Ohreneulen-Glucke	processionary moth-lappet
*Papilio alexanor	Alexanor-Schwalbenschwanz	Alexanor swallowtail
Papilio machaon	Schwalbenschwanz	Corsican swallowtail
Paradiarsia punicea	Rotbraune Moorheiden-Erdeule	red-brown marsh heather ground moth
Parargе xiphia	Madeira-Brettspiel	Madeira white-skirted hairstreak
Parargе xiphioides	Kanaren-Brettspiel	canary white-skirted hairstreak
Parasemia plataginis	Wegerichbaer	plantain tiger moth
*Parnassius apollo	Apollofalter	Apollo butterfly
*Parnassius mnemosyne	Schwarzer Apollofalter	black Apollo butterfly
*Parnassius phoebus	Alpen-Apollofalter	alpine Apollo butterfly
*Pechipogo plumigeralis	Steppenheiden-Spannereule	steppe heather geometer
*Pericallia matronula	Augsburger Baer	Augsburg tiger moth
*Periphanes delphinii	Rittersporneule	larkspur moth
Perisomena caecigena	Ockerfarbener Pfauenspinner	ocher peacock butterfly
*Perizoma sagittata	Wiesenrauten-Blattspanner	meadow rue leaf geometer
Pharetra cinerea	Sandheiden-Rindeneule	sand heather bark moth
Phlogophora scita	Waldfarn-Smaragdeule	wood fern emerald moth
Photedes captiuncula	Grashalden-Haineulchen	grassy slope grove moth
Phragmatobia caesarea	Kaiserbaer	emperor tiger moth
Phragmitiphila nexa	Wasserschwaden-Roehrichteule	reed moth
*Phyllodesma illicifolia	Weidenglucke	willow lappet
Phyllodesma tremulifolia	Eichenglucke	oak lappet
Pieris cheiranthi	Kanarischer Kohlweissling	canary cabbage butterfly
Plebejus loewii	Loews-Blaeuling	Loew's blue
Plusia spp.	Goldeulen	gold moths -all European species
Polychrysia moneta	Goldige Eisenhut-Hoeckereule	golden monkshood hump moth
Polygonia c-album	C-Falter	angelwing, white comma
Polymixis favicinta	Gelbliche Steineule	yellow stone moth
*Polymixis polymita	Olivbraune Steineule	olive-brown stone moth
Polyphaenis sericata	Bunte Ligustereule	spotted privet moth
Pontia callidice	Alpenweissling	alpine white
Pontia chloridice		
*Porphyrinia noctualis	Zwergeulchen	pygmy moth
Problepsis ocellata		
Proclossiana eunomia	Randring-Perlmutterfalter	side-ring fritillary
Proserpinus proserpina	Nachtkerzenschwaermer	primrose hawkmoth
Pseudochazara spp.		-all European species
Pseudophilotes bavius	Bavius Blaeuling	Bavius' blue

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
Pseudotergumia wyssii		
*Pyrgus accretus	Veritys Wuerfelfalter	Verity's cube moth
*Pyrgus armoricanus	Oberthuers Wuerfelfalter	Oberthur's cube moth
*Pyrgus cirsii	Ramburs Wuerfelfalter	Rambur's cube moth
*Pyrgus trebevicensis	Warrens Wuerfelfalter	Warren's cube moth
Pyrgus spp.	Wuerfelfalter	cube moth -all European species not individually listed
*Pyrois cinnamomea	Glanz-Zimteule	glossy cinnamon moth
Pyronia tithonus	Rotbraunes Ochsenauge	red-brown peacock butterfly
Rethera komarovi		
Rhodostrophia spp.	Rotbandspanner	red-banded geometer -all European species
Rhyacia lucipeta	Glaenzende Erdeule	brilliant ground moth
Rhyparia purpurata	Purpurbaer	purple tiger moth
Saturnia pyri	Wiener Nachtpfauenauge	Viennese emperor moth
Scopula decorata	Thymian-Steppenrasen-spanner	thyme steppe geometer
Scotopteryx coarctaria	Ginsterheiden-Wellen-striemenspanner	broom heater wave-wave-marked geometer
Sedina buettneri	Buettners Schraegfluegeleule	Buettner's angle wing
Selidosema brunneararia	Purpurgrauer Hornklee-Tagspanner	purple-gray butterjags geometer
*Semiothisa carbonaria	Baerentrauben-Baender-spanner	bearberry banded geometer
Senta flammea	Striemen-Schilfeule	wealed reed moth
Simyra albovenosa	Goezes Roehrichteule	Goeze's reed moth
Simyr nervosa	Weissgraue Schraegfluegeleule	pale-gray angle moth
Smerinthus ocellata	Abendpfauenauge	eyed hawk moth
Spatalia argentina	Silberfleckenspinner	silverspot
Sphinx ligustri	Ligusterschwaermer	privet hawk moth
Spialia sertorius	Roter Wuerfelfalter	red cube moth
Spiris striata	Gestreifter Grasbaer	striped antler moth
Standfussiana lucernea	Standfuss' Zackenbindeneule	Standfuss' painted lady
Staurophora celsia	Malachiteule	malachite moth
Sublysandra myrrha		
Sublysandra myrrhina		
Syngrapha interrogationis	Rauschbeeren-Silbereule	whortleberry silver moth
*Synopsia sociaria	Heidekraut-Buntstreifenspanner	heather striped geometer
Syntomis phegea	Weissfleck-Widderchen	white-spotted forester
Synvaleria jaspidea	Schlehen-Jaspiseule	blackthorn jasper moth
Synvaleria oleagina	Olivgruene Schmuckeule	olive-green jeweled moth
Thetidia smaragdaria	Smaragdgruener Schaf-garbenspanner	emerald green milfoil geometer

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
Thyria jacobaeae	Blutbaer	blood tiger moth
Tomares callimachus		
Tomares romanovi		
Trichosea ludifica	Gelber Hermelin	yellow ermine moth
*Vacciniina optilete	Moosbeerenblaeuling	cranberry blue
Vanessa indica vulcanica	Indischer Admiral	Indian admiral
Xestia agathina	Heidekraut-Bodeneule	heather ground moth
*Xestia castanea	Ginsterheiden-Bodeneule	broom heather ground moth
Xestia collina	Huegel-Erdeule	hill ground moth
*Xestia sincera	Hochmoor-Fichteneule	sphagnum bog pine moth
Xylena exsoleta	Fahlgraue Moderholzeule	pale-gray wood rot moth
Zegria eupheme	Rotfleck-Aurorafalter	red-spotted orange tip
Zerynthia polyxena	Osterluzeifalter	hollowroot butterfly
*Zerynthia rumina	Spanischer Osterluzeifalter	Spanish hollowroot butterfly
*Zygaena cyarae	Haarstrang-Widderchen	sulfurweed forester
Zygaenidae spp.	Widderchen	forester -all European species not individually listed
ANNELIDA	RINGELWUERME	ANNELIDS
Hirudo medicinalis	Blutegel	medicinal leech
CRUSTACEA	KREBSE	CRUSTACEANS
Phyllopoda	Blattfuss-Krebse	Phyllopods
*Branchipus schaefferi		
Branchipus stagnalis		
*Chirocephalus diaphanus		
Lepidurus apus		
*Leptestheria dahalacensis		
Lemnadia lenticularis		
*Lyceus brachyurus		
Siponophanes grubei		
*Tanymastix stagnalis		
Triops cancriformis		
Decapoda	Zehnfuss-Krebse	Decapods
Astacus astacus	Edelkrebs	brook crayfish
Austropotamobius torrentium	Steinkrebs	stone crayfish
Homarus gammarus (vulgaris)	Hummer	lobster

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
ARACHNIDA	SPINNENTIERE	ARACHNIDS
*Arctosa cinerea		
*Argyroneta aquatica		
*Dolomedes fimbriatus		
*Dolomedes plantarius		
*Eresus cinnaberinus		
*Philaeus chrysops		
MOLLUSCA	WEICHTIERE	MOLLUSKS
*Polyplacophora	Kaeferschnecken	Chitons
Lepidochiton cinereus	Kaeferschnecke	chiton
GASTROPODA	SCHNECKEN	GASTROPODS
Calliostoma zizyphinus	Bunte Kreiselschnecke	spotted top shell
Charonia tritonis	Tritonshorn	sea trumpet
Helix aspersa	Gefleckte Weinbergschnecke	spotted edible snail
Helix pomatia	Gewoehnliche Weinbergschnecke	common edible snail
Patina pellucida		
Thais lapillus	Nordische Purpurschnecke	northern purple snail
LAMELLIBRANCHIATA	MUSCHELN	LAMMELIBRANCHS
Anodonta anatina	Flache Teichmuschel	flat swan mussel
Anodonta cygnea	Gemein Teichmuschel	common swan mussel
*Margaritifera margaritifera	Flussperlmuschel	pearly fresh-water mussel
Pinna nobilis	Steckmuschel	European oyster
*Pseudanodonta complanata	Abgeplattete Teichmuschel	flattened swan mussel
*Pseudanodonta elongata	Schlanke Teichmuschel	slender swan mussel
*Pseudanodonta middendorffi	Donau Teichmuschel	Danube swan mussel
*Unio crassus	Kleine Flussmuschel	lesser fresh water mussel
Unio pictorum	Malermuschel	Painter's gaper
Unio tumidus	Grosse Flussmuschel	great freshwater mussel

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
ANTHOZOA	BLUMENTIERE	ANTHOZOA
Corallium rubrum	Edelkoralle	precious coral
	FLORA	
PTERIDOPHYTA ET SPERMATOPHYTA	FARN- UND BLUETENPFLANZEN	FERNS AND FLOWERING PLANTS
*Abies nebrodensis (Lojac.) Mattei	Nebroden-Tanne	Nebroden fir
Achillea atrata L.	Schwarze Schafgarbe	black milfoil
Achillea clavennae L.	Bittere Schafgarbe	bitter milfoil
Achillea clusiana Tausch	Ostalpen-Schafgarbe	East alpine milfoil
Achillea erba-rotta All.	Westalpen-Schafgarbe	West alpine milfoil
Achillea moschata Wulfen	Moschus-Schafgarbe, Iva	musk milfoil
Achillea nana L.	Zwerg-Schafgarbe	dwarf milfoil
Achillea oxyloba (DC.) Schultz-Bip.	Dolomiten-Schafgarbe	dolomite milfoil
Aconitum spp.	Eisenhut	monkshood -all European species
*Adenophora Liliifolia (L.) Ledeb. ex A. DC.	Schellenblume	bellflower
Adonis vernalis L.	Fruehlings-Adonisroeschen	spring adonis
*Aeonium saundersii Bolle	Kanarendachwurz	Saunders' houseleek
Aeonium spp.	Kanarendachwurz	houseleek -all species not individually listed
Aichryson spp.	Aichryson	Aichryson -all species
*Allium crameri Aschers. & Boiss.	Cramers Lauch	Cramer's leek
Allium strictum Schrader	Steifer Lauch	erect leek
Allium victorialis	Allermannsharnische	spotted ramson, serpent's garlic
Aloe albiflora A. Guill.		
Aloe compressa Perr. (incl. A. compress var. schistophila Perr.)		
Aloe descoingsii Reyn.		
Aloe dinteri Berger		
Aloe haemanthifolia Marl. et Berger		
Aloe parvula Berger		
Aloe rauhii Reyn.		

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
Althaea officinalis L.	Echter Eibisch	marshmallow
*Alyssum akamasicum B.L. Burtt	Akamas-Steinkraut	Akamas alyssum
*Alyssum fastigiatum Heywood	Bueschel-Steinkraut	tufted alyssum
Alyssum montanum L.	Berg-Steinkraut	mountain alyssum
Alyssum saxatile L.	Felsen-Steinkraut	basket-of-gold, rock alyssum
*Amaracus cordifolius Aucher-Eloy & Montbret ex Benth.	Herzblatt-Dost	heart-leaf marjoram
*Anacyclus alboranensis Esteve Chueca & Varo	Alboran-Kreisblume	Alboran circle flower
*Anagallis tenella (L.) L.	Zarter Gauchheil	delicate pimpernel
Anagyris *latifolia* Brouss. ex Willd.	Breitblaettriger Stinkstrauch	broad-leafed stink bush
Anchusa crispa Viv.	Krause Ochsenzunge	curly oxtongue
Androcymbium rechingeri Greuter	Rechingers Androcymbium	Rechinger's Androxymbium
Anemone narcissiflora L.	Narzissen-Windroeschen, Berghaehnlein	Narcissus anemone, mountain wildflower
Anemone sylvestris L.	Grosses Windroeschen	greater anemone
Antennaria dioica (L.)Gaertner	Katzenpfoetchen cat's paw	
*Anthyllis lemanniana Lowe	Lemanns Wundklee	Lemann's vetch
*Antirrhinum charidemi Lange	Cabo-de-Gata-Loewenmaul	Charidemi's snapdragon
Apium inundatum (L.)Rchb. f.	Blutender Sellerie	streaming celery
*Apium repens (Jacq.) Lag.	Kriechender Sellerie	creeping celery
Aquilegia cazoriensis Heywood	Cazoria-Akelei	Cazoria columbine
Aquilegia spp.	Akelei	Columbine -all species not individually listed
*Arabis kennedyae Meikle	Kennedys Gaensekresse	Kennedy's wall cress
Arctostaphylos uva-ursi (L.) Spreng.	Echte Baerentraube	true bearberry
*Arenaria lithops Heywood ex MacNeill	Stein-Sandkraut	stone sandwort
*Argyranthemum lidii Humphries	Lids Kanarenmargerite	Lid's marguerite
*Argyranthemum pinnatifidum (L. fil.) Lowe subsp. succulentum (Lowe) Humphries	Fleischige Kanarenmargerite	fleshy marguerite
*Argyranthemum thalassophilum (Svent.) Humphries	Salvagen Kanarenmargerite	coast marguerite

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
*Argyranthemum winteri (Svent.) Humphries	Winters Kanarenmargerite	Winter's marguerite
Ariocarpus spp.	Wolffruchtkaktus	wooly fruit cactus -all species
*Armeria purpurea Koch	Ried-Grasnelke	reed pink
*Armeria rouyana Daveau	Rouys Grasnelke	Rouy's pink
*Armeria soleirolii (Duby) Godron	Soleirois Grasnelke	Soleiroi's marguerite
Armeria spp.	Grasnelke	pinks -all European species not individually listed
Arnica montana L.	Arnika, Wohlverleih	arnica, mountain tobacco
Artemisia genipi Weber	Schwarze Edelraute	black ruewort
Artemisia glacialis L.	Gletscher-Edelraute	glacier ruewort
*Artemisia granatensis Boiss.	Granada-Beifuss	Granada mugwort
*Artemisia laciniata Willd.	Schlitzblatt-Beifuss	slit-leaf mugwort
Artemisia umbelliformis Lam.	Echte Edelraute	true ruewort
*Asparagus fallax Svent.	Taeuschender Spargel	false asparagus
Asplenium adulterinum Milde	Braungruener Streifenfarn	brownish green spleenwort
Asplenium billotii F.W. Schultz	Billots Streifenfarn	Billot's spleenwort
Asplenium cuneifolium Viv.	Serpentin-Streifenfarn	serpentine spleenwort
Asplenium fissum Kit. ex Willd.	Zerschlitzter Streifenfarn	slit spleenwort
Asplenium fontanum (L.) Bernh.	Jura-Streifenfarn	Jura spleenwort
Aster alpinus L.	Alpen-Aster	alpine aster
Aster amellus L.	Berg-Aster	mountain aster
*Aster pyrenaeus Desf. ex DC.	Pyrenaeen-Aster	Pyrenees aster
*Aster sibiricus L.	Sibirische Aster	Siberian aster
*Asteriscus schultzii (Bolle) Pitard & Proust	Schultz' Sternauge	Schultz' stareye
*Astragalus algarbiensis Coss. ex Bunge	Algarve-Tragant	Algarve tragacarth
*Astragalus aquilanus Anzalone	Abruzzen-Tragant	tragacarth
*Astragalus maritimus Moris	Strand-Tragant	beach tragacarth
*Astragalus verrucosus Moris	Warziger Tragant	warty tragacarth
*Atractylis arbuscula Svent. & Michaelis	Baeumchen-Atractylis	tree tractylis
*Atropa baetica Willk.	Analusische Tollkirsche	Andalusian deadly nightshade
*Bellevalia salah-eidii Taeckh. & Boulos	Aegyptische Bellevalie	Egyptian bellevalia

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
*Bellevalia spp.	Bellevalie	bellevalia -all species not individually listed
*Bencomia brachystachya Svent.	Kurzaehrige Bencomia	short-spiked bencomia
*Bencomia exstipulata Svent.	Nebenblattlose Bencomia	branch-leafed bencomia
Betula humilis Schrank	Niedrige Birke	low birch
Betula nana L.	Zwerg-Birke	dwarf birch
Biscutella laevigata L.	Gewoehnliche Brillenschote	common buckler mustard
*Biscutella neustriaca Bonnet	Pariser Brillenschote	Parisian buckler mustard
Blossfeldia liliputana Werderm.		
*Botrychium matricariifolium (Retz.) A. Braun ex Koch	Aestiger Rautenfarn	knotty rattlesnake fern
*Botrychium multifidum (S.G. Gmelin) Rupr.	Vielteiliger Rautenfarn fern	pinnatifid rattlesnake
*Botrychium simplex E. Hitchc.	Einfacher Rautenfarn	simple rattlesnake fern
*Botrychium virginianum (L.) Swartz	Virginischer Rautenfarn	Virginia rattlesnake fern
*Botrychium spp.	Rautenfarn, Mondraute	rattlesnake fern, moonwort -all European species not individually listed
*Brassica bourgeaui (Webb ex Christ) Kuntze	Bourgeaus Kohl	Bourgeau's cabbage
Brassica hilarionis Post	Zypern-Kohl	cypress cabbage
*Brassica macrocarpa Guss.	Grossfruechtiger Kohl	great-fruit cabbage
*Braya purpurascens (R.Br.) Bunge	Purpur-Knotenschoetchen	purple knot pod
Brimeura spp.	Brimeura	Brimeura -all species
*Bupleurum kakiskalae Greuter	Kakiskala-Hasenohr	Kakiskala buplever
Buxus sempervirens L.	Buschbaum	dwarf tree
*Caldesia parnassifolia (Bassi ex L.) Parl.	Herzloeffel	heartspoon
Calla palustris L.	Calla, Schlangenwurz	calla, adderwort
*Calystegia soldanella (L.) R. Br.	Strand-Winde	shore bindweed
*Campanula baborensis Quezel	Algerische Glockenblume	Algerian bellflower
Campanula latifolia L.	Breitblaettrige Glockenblume	broad-leafed bellflower
*Campanula sabatia De Not.	Savona-Glockenblume	Savona bellflower
Campanula thrysoides L.	Strauss-Glockenblume	thyrse bellflower

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
Caralluma burchardii N.E. Brown	Burchards Fliegenblume	Burchard's fly orchid
Caralluma europaea (Guss.) N.E. Brown	Europaeische Fliegenblume	European fly orchid
Caralluma munbyana (Decaisne) N.E. Brown	Munbys Fliegenblume	Munby's fly orchid
*Carduncellus ilicifolius Pomel	Stachelblaettrige Zwergdistel	spiny-leafed carduncellus
Carex baldensis L.	Monte-Baldo-Segge	Monte Baldo sedge
Carlina acaulis L.	Silberdistel	carline thistle
*Centaurea balearica J.D. Rodriguez	Balearen-Flockenblume	Balieren knapweed
*Centaurea heldreichii Halacsy	Heldreichs Flockenblume	Heldreich's knapweed
*Centaurea horrida Badaro	Stachelige Flockenblume	spiny knapweed
*Centaurea kalambakensis Freyn & Sint.	Kalambaka-Flockenblume	Kalamabaka knapweed
*Centaurea lactiflora Halacsy	Milchweisse Flockenblume	milk-white knapweed
*Centaurea linaresii Lazaro	Linares' Flockenblume	Linares' knapweed
*Centaurea niederi Heidr.	Nieders Flockenblume	Nieder's knapweed
*Centaurea peucedanifolia Boiss. & Orph.	Haarstrang-Flockenblume	hogs fennel knapweed
*Centaurea princeps Boiss. & Heidr.	Fuerstliche Flockenblume	royal knapweed
*Centaurium spp.	Tausendgueldenkraut	centaury -all native species
Ceropegia spp.	Leuchterblume	ceropegia
Ceterach officinarum DC.	Milzfarn	spleenwort
*Chamaemeles coriacea Lindl.	Lederige Zierquitte	coriaceous ornamental quince
*Cheirolophus arboreus (Webb) Holub	Baumartige Flockenblume	tree knapweed
*Cheirolophus duranii	Durans Flockenblume	Duran's knapweed
*Cheirolophus junonianus (Svent.) Holub	La-Palma-Flockenblume	La Palma knapweed
*Cheirolophus massonianus (Lowe) Hansen & Sunding	Massons Flockenblume	Masson's knapweed
*Cheirolphus tagananensis (Svent.) Holub	Taganana-Flockenblume	Tagana knapweed
*Chimaphila umbellata (L.) Barton	Doldiges Winterlieb	umbelliferous winterlove
*Chionodoxa lochiae Meikle	Schneestolz	snow pride
*Cistus osbeckiaefolius Webb ex Christ	Osbeckiablatt Zistrose	Osbeck's rockrose
Clematis alpina L.	Alpen-Waldrebe	alpine clematis
Cochlearia spp.	Loeffelkraut	spoonwort -all native species

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
*Consolida samia P.H.Davis	Samos-Rittersporn	Samian larkspur
*Convolvulus argyrothamnos Greuter	Silber-Winde	silver birdweed
*Convolvulus lopez-socasi Svent.	Lanzarote-Winde	Lanzarote birdweed
*Convolvulus massonii A. Dietr.	Massons Winde	Masson's birdweed
Copiapoa spp. -all species		
*Coronopus navasli Pau	Navas' Kraehenfuss	Navas' swine cress
Cortusa matthioli L.	Alpen-Heilgloeckel	alpine bear's-ear sanicle
*Crambe maritima	Gewoehnlicher Meerkohl	common sea cabbage
*Crambe sventenii B. Petters. ex Bramw. & Sunding	Sventenius-Meerkohl	Sventenius sea cabbage
*Crocus cyprius Boiss. & Kotschy	Zyprischer Krokus	Cyprian crocus
*Crocus hartmannianus Holmboe	Hartmanns Krokus	Hartmann's crocus
Crocus spp.	Krokus	crocus -all species not individually listed
Cryptogramma crispa (L.) R. Br. ex Hooker	Krauser Rollfarn	curly roll fern
*Cupressus dupreziana A. Camus	Sahara-Zypresse	Sahara cypress
Cyatheaceae spp.	Baumfarne	tree ferns -all species
*Cyclamen balearicum Willk.	Balearen-Alpen-veilchen	Balearic cyclamen
*Cyclamen cilicium Boiss. et Heldr.	Zilizisches Alpen-veilchen	Ciliacian cyclamen
*Cyclamen creticum (Doerfl.) Hildebr.	Kretisches Alpen-veilch	Cretian cyclamen
*Cyclamen graecum Link	Griechisches Alpen-veilchen	Greek cyclamen
*Cyclamen mirabile Hildebr.	Wunderbares Alpenvielchen	miraculous cyclamen
*Cyclamen parvi-florum Pobed.	Kleinbluetiges Alpen-veilchen	small-blossomed cyclamen
*Cyclamen purpur-ascens Mill.	Eurpoaeisches Alpen-veilchen	European cyclamen
*Cyclamen pseud-ibericum Hildebr.	Amanus-Alpen-veilchen	Amanus cyclamen
*Cyclamen trochopteran-thum O. Schwarz	Fluegelrad-Alpen-veilchen	winged cyclamen
Cyclamen spp.	Alpenveilchen	cyclamen -all species not individually listed
*Cyperus papyrus L. subsp. hadidii Chrtek & Slavikova	Hadidis Papyrus	Hadidi's papyrus

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
Cypripedium spp.	Frauenschuhorchiden	ladies' slipper orchids -all non-European species
Cystopteris montana (Lam.) Desv.	Berg-Blasenfern	mountain bladder fern
*Cystopteris sudetica A. Br. & Milde	Sudeten-Blasenfarn	Sudetan bladder fern
*Cytisus aeolicus Guss. ex Lindl.	Aeolischer Geissklee	Aeolian trefoil
*Daphne rodriguezii Texidor	Rodriguez' Seidelbast	Rodriquez' daphne
Daphne spp.	Seidelbast	daphne -all European species not individually listed
*Delphinium caseyi B.L. Burtt	Caseys Rittersporn	Casey's larkspur
Delphinium elatum L.	Hoher Rittersporn	higher larkspur
Dianthus spp.	Nelke	pinks -all species
Dicksoniaceae spp.	Baumfarne	tree ferns -all species, **EXCEPT** for substrate of orchids from Brazil that has been planted and has taken root
Dictamnus albus L.	Diptam	frakinella
*Digitalis atlantica Pomel	Atlantischer Fingerhut	Atlantic foxglove
Digitalis grandiflora Mill.	Grossbluetiger Fingerhut	large scarlet foxglove
Digitalis lutea L.	Gelber Fingerhut	yellow foxglove
*Diplazium caudatum (Cav.) Jermy	Schwanz-Doppelschleierfarn	double-indusium tail fern
*Diplotaxis siettiana Maire	Siettis Doppelsame	Sietti's double-seed
Discocactus spp.	Scheibenkakteen	disk cacti -all species
Draba spp.	Felsenbluemchen	stone flower -all European species, **EXCEPT:**
Draba muralis L.	Mauer-Felsenbluemchen	wall stone flower
Draba nemorosa L.	Hain-Felsenbluemchen	grove stone flower
Drosera spp.	Sonnentau	sundew -all native species
Dryopteris cristata (L.) A. Gray	Kammfarn	comb fern
Echinocereus delaetii Guerke		
*Echium auberianum Webb & Berthel.	Aubers Natternkopf	Auber's echium
*Echium genianoides Webb ex Coincy	Enzianaehnlicher Natternkopf	gentian-like echium

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
*Echium handiense Svent.	Jandia-Natternkopf	Jandi echium
*Echium pininana Webb & Berthel.	Pininana-Natternkopf	Pininana echium
*Echium wildpretii H.H.W. Pears. ex Hook. fil.	Wildprets Natternkopf	Wildpret's echium
*Enarthrocarpus pterocarpus (Pers.) DC.	Gefluegelte Gliederschote	winged joint pod
Encephalocarpus strobiliformis (Werd.) Berg.		
*Epilobium fleischeria Hochst.	Fleischers Weidenroeschen	Fleischer's willow herb
Epithelantha spp.	Epithelantha	epithelantha -all species
Eritrichum nanum (L.) Schrader ex Gaudin	Himmelsherold	heaven's herald
Eryngium alpinum L.	Alpen-Mannstreu	alpine eryngo
Eryngium maritimum L.	Strand-Mannstreu Stranddistel	strand eryngo sea holly
*Euphorbia anachoreta Svent.	Einsiedler-Wolfsmilch	anchorite spurge
Euphorbia ankarensis P. Boit.		
Euphorbia balsamifera Aiton		
Euphorbia bupleurifolia Jacq.		
Euphorbia crispa (Haw.) Sweet		
Euphorbia cylindrifolia J. Marn.-Lap. & Rauh		
Euphorbia decaryia A. Guill.		
Euphorbia francoisii Leandri		
Euphorbia guillauminiana P. Boit.		
*Euphorbia handiensis	Jandia-Wolfsmilch	Jandi spurge
Euphorbia bymnocalycioides M. Gilbert et S. Carter		
Euphorbia handiensis Burchard		
Euphorbia lucida Waldstein & Kitaibel	Glanz-Wolfsmilch	glossy spurge
Euphorbia millotii Ursch & Leandri		
Euphorbia moratii Rauh		
Euphorbia multiceps Berger		
Euphorbia namaquensis N.E. Br.		

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
Euphorbia neohumbertii P. Boit.		
Euphorbia pachypodioides P. Boit.		
Euphorbia palustris L.	Sumpf-Wolfsmilch	marsh spurge
Euphorbia pedilanthoides M. Denis		
Euphorbia piscidermis G. Gilbert		
*Euphorbia ruscinonensis Boiss.		
Euphorbia squarrosa Haw.		
Euphorbia trichadenia Pax		
Euphorbia viguieri M. Denis		
Ferula cypria Post	Zyprischer Riesenfenchel	Cyprian giant fennel
*Fritillaria meleagris L.	Echte Schachblume	fritillaria
Fritillaria spp.	Schachblume	fritillaria -all species not individually listed
Galanthus spp.	Schneegloeckchen	snowdrop -all species
Galium litorale Guss.	Strand-Labkraut	shore bedstraw
*Genista spinulosa Pomel	Kleindorniger Ginster	small-spined broom
Gentiana lutea L.	Gelber Enzian	yellow gentian
Gentiana spp.	Enzian	gentian -all European species
*Gentianella bohemica Skalicky	Boehmischer Enzian	bohemian gentian
*Gentianella uliginosa (Willd.) Boerner	Sumpf-Enzian	marsh gentian
Gentianella spp.	Enzian	gentian -all European species not individually listed
*Geranium maderense Yeo	Madeira-Storchschnabel	Madeira cranesbill
*Gladiolus palustris Gaudin	Sumpf-Siegwurz	marsh gladiolus
Gladiolus spp.	Siegwurz	gladiolus -all species not individually listed
*Globularia ascanii D. Bramwell & Kunkel	Weisse Kugelblume	white globe daisy
*Globularia sarcophylia Svent.	Fleischige Kugelblume	fleshy globe daisy
*Globularia stygia Orph. ex Boiss.	Dunkle Kugelblume	dark globe daisy
Globularia spp.	Kugelblume	globe daisy -all European species not individually listed

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
*Gratiola officinalis L.	Gottes-Gnadenkraut	God's hedge hyssop
Greenovia spp.	Greenovie	greenovia -all species
Gymnospermium altaicum (Pallas) Spach	Altai-Trapp	Altaic trap
*Gypsophila fastigiata L.	Ebenstraeussiges Gipskraut	corymbic baby's breath
*Gypsophila papillosa P. Porta	Warziges Gipskraut	warty baby's breath
Helianthemum apenninum (L.) Mill.	Apenninen-Sonnenroeschen	Apennine sun rose
*Helianthemum bystropogophyllum Svent.	Bystropogonblaettriges Sonnenroeschen	bustropogon-leafed sun rose
Helianthemum canum (L.) Baumg.	Graufilziges Sonnenroeschen	gray tomentose sun rose
*Helianthemum sphaerocalyx Gauba & Janchen	Kugelkeich-Sonnenroeschen	globe calyx sun rose
Helichrysum arenarium (L.) Moench	Sand-Strohblume	sand strawflower
*Helichrysum monogynum B.L. Burtt & Sunding	Eingrifflige Strohblume	monostylous strawflower
Helleborus niger L.	Christrose, Schwarze Nieswurz	Christmas rose, black hellebore

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
Helleborus spp.	Nieswurz	hellebore -all European species not individually listed
Hepatica nobilis Schreber	Leberbluemchen	liverwort
Horminum pyrenaicum L.	Pyrenaeen-Drachenmaul	Pyreneess dragon's mouth
Hottonia palustris L.	Wasserfeder, Wasserprimel	featherfoil, water gillyflower
*Huter rupestris P. Porta	Felsen-Hutera	stone hutera
Hyacinthella spp.	Zwerghyazinthe	dwarf hyacinth -all species
*Hymenophyllum tunbrigense (L.) Smith	Hautfarn	filmy fern
*Hypericum aciferum (Greuter) N.K.B. Robinson	Nadel-Johanniskraut	Needle St.-John's-wort
*Hypericum elegans Stephan ex Willd.	Zierliches Johanniskraut	delicate St.-John's-wort
*Hypericum elodes L.	Sumpf-Johanniskraut	marsh St.-John's-wort
*Iberis runemarkii Greuter & Burdet	Runemarks Schleifenblume	Runemark's canytuft
Ilex aquifolium L.	Stechpalme	holly
*Ipomoea sinaica Taeckh. & Boulos	Sinai-Prunkwinde	Sinai showy bindweed
*Iris lortetii Barbey	Lortets Schwertlilie	Lortet's iris
*Iris spuria L.	Wiesen-Schwertlilie	giant iris
*Iris variegata L.	Bunte Schwertlilie	spotted iris
Iris spp.	Schwertlilie	iris -all species not individually listed
*Isoetes echinospora Dur.	Stachelsporiges Brachsenkraut	spiny-spored quillwort
*Isoetes lacustris L.	See-Brachsenkraut	Merlin's grass, common quillwort
Isoplexis canariensis (L.) Loud.	Gewoehnlicher Kanaren-fingerhut	common canary foxglove
*Isoplexis chalcantha Svent. & O'Shanahan	Behaarter Kanaren-fingerhut	pubescent canary foxglove

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
Isoplexis isabelliana	Kahler Kanarenfingerhut	glabrous canary foxglove
*Juncus stygius L. (Webb & Berthel.) Masf.	Moor-Binse	marsh rush
Juniperus cedrus Webb & Berthel.	Zedern-Wacholder	prickly cedar
Jurinea cyanoides (L.) Rchb.	Sand-Silberscharte	sand felt-serrulata
*Kochia saxicola Guss.	Gelsen-Radmelde	stone fan orache
*Kunkeliella canariensis Stearn	Gran-Canaria-Kunkeliella	grand canary kunkelielia
*Kunkeliella psilotoclada (Svent.) Stearn	Teneriffa-Kunkeliella	Teneriffe kunkelielia
*Lamyropsis microcephala (Moris) Dittrich & Greuter	Sardische Lamyropsis	Sardinian lamyropsis
Laser trilobum (L.) Borkh.	Rosskuemmel	horse caraway
*Laserpitium longiradium Boiss.	Langstrahliges Laserkraut	long-rayed laser-wort
Lathyrus bauhinii Genty	Schwert-Platterbse	sword vetchling
Lathyrus maritimus Biglow	Strand-Platterbse	sand vetchling
Lathyrus pannonicus (Jacq.) Garcke	Ungarische Platterbse	Hungarian vetchling
*Lavatera phoenicea Vent.	Purpurrote Strauchmalve	purple-red sea mallow
Ledum palustre L.	Sumpf-Porst	marsh wild rosemary
*Leontodon siculus (Guss.) Finch & Sell	Sizilianischer Loewenzahn	Sicilian dandelion
Leontopodium alpinum Cass.	Edelweiss	edelweiss
Leucojum aestivum L.	Sommer-Knotenblume	summer snowflake
Leucojum vernum L.	Fruehlings-Knotenblume, Maerzenbecher	spring snowflake, snowflake
*Leuzea cynaroides (Link) Font Quer	Artischockenartige Bergscharte	artichoke mountain orache
Leuzea rhapontica (L.) Holub	Alpen-Bergscharte	alpine mountain orache
Lilium spp.	Lilie	lily -all species
*Limonium arborescens (Brouss.) Kuntze	Baumaehnlicher Strand-flieder	arborescent sea lavender
*Limonium dendroides Svent.	Baumartiger Strand-flieder	arborescent sea lavender
*Limonium fruticans (Webb) Kuntze	Strauchiger Strandflieder	shrubby sea lavender
*Limonium imbricatum (Webb & Berthel.) Hubbard	Dachziegeliger Strandflieder	shingled sea lavender
*Limonium macrophyllum (Brouss.) Kuntze	Grossblaettriger Strand-flieder	large-leafed sea lavender
*Limonium paradoxum Pugsley	Seltsamer Strandflieder	strange sea lavender
*Limonium preauxii (Webb & Berthel.) Kuntze	Preaux' Strandflieder	Preaux' sea lavender

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
*Limonium recurvum C.E. Salmon	Zurueckgeruemmter Strandflieder	recurved sea lavender
*Limonium spectabile (Svent.) Kunkel & Sunding	Praechtiger Strandflieder	magnificent sea lavender
Limonium spp.	Strandflieder	sea lavendar -all European species not individually listed
*Linaria burceziana Maire	Burcez-Leinkraut	Burcez linaria
Linnaea borealis L.	Moosgloeckchen	twinflower
*Linum flavum L.	Gelber Lein	yellow flax
*Linum perenne L.	Ausdauernder Lein	perennial flax
Linum spp.	Lein	flax -all European species not individually listed, EXCEPT:
Linum catharicum L.	Purgier-Lein	purging flax
Lloydia serotina (L.) Rchb.	Spaetbluehende Faltenlilie	late-blooming alp lily
*Lobelia dortmana L.	Wasser-Lobelie	water lobelia
*Loflingia tavaresiana G. Samp.	Portugiesische Loeflingie	Loeflingia
Logfia neglecta (Soy.-Will.) Holub	Verkanntes Filzkraut	neglected cudweed
Lomatogonium carinthiacum (Wulf.) Rchb.	Kaerntner Tauernbluemchen dewflower	Carinthian
Lophophora spp. -all species		
*Lotus bertheloii Masferrer	Berthelots Hornklee	Berthelot's crowtoe
*Lotus callis-viridis D. Bramwell & D.H. Davis	Gran-Canaria-Hornklee	Grand Canary crowtoe
*Lotus kunkelii (Esteve) D. Bramwell & D.H. Davis	Kunkels Hornklee	Kunkel's crowtoe
*Lotus maculatus Breitfeld	Gefleckter Hornklee	spotted crowtoe
*Lugoa revoluta DC.	Teneriffa-Lugoa	Teneriffe lugoa
Lycopodiales spp.	Baerlappgewaechse	club moss -all native species
Mammillaria goldii Glass & Foster		
Mammillaria haudeana Lau & Wagner		
Mammillaria hernandezii Glass & Foster		
Mammillaria humboldtii Ehrenb.		
Mammillaria saboae Glass		
Mammillaria theresae Cutak		
*Marcetella maderensis (Bornm.) Svent.	Madeira-Marcetella	Madeira marcetelia

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
Matteuccia struthiopteris (L.) Todaro)	Straussenfarn	Ostrich fern
*Medemia argun (Martius) Wuertt. ex Mart.	Nordafrikanische Medemia	North African marcetelia
Melocactus spp.	Melonenkakteen	melon cacti -all species
Meyanthes trifoliata L.	Fieberklee	water trefoil
*Mesembryanthemumu gaussenii Leredde	Gaussens Mittagsblume	Gaussen's marigold
*Micromeria taygetes P.H. Davis	taygetos-Micromerle	
*Monanthes ad-noscepes Svent.	Druesige Zwergfetthenne	glandular dwarf stonecrop
Monanthes spp.	Zwergfetthenne	dwarf stonecrop -all species not individually listed
*Muscari gussonei (Parl.) Tod.	Gussones Traubenhyazinthe	Gaussen's grape hyacinth
Muscari spp.	Traubenhyazinthe	grape hyacinth -all species not individually listed
*Musschia wollastonii Lowe	Musschia	musschia
*Myosotis rehsteineri Wartm.	Bodensee Vergissmeinnicht	Bodensee forget-me-not
*Narcissus exsertus Haw.	Stern-Narzisse	star narcissus
Narcissus spp.	Narzisse	narcissus -all species not individually listed
Narthecium ossifragum (L.) Huds.	Beinbrech, Aehrenlilie	bo asphodel
Nepenthes spp.	Kannepflanze	pitcher plants -all species
*Nepeta sphaciotica P.H. Davis	Westkretische Katzenminze	West Cretan catnip
Nuphar lutea (L.) Sm.	Gelbe Teichrose	yellow water lily
*Nuphar pumila (Timm) DC.	Kleine Teichrose	small water lily
Nymphaea alba L.	Weisse Seerose	white pond lily
*Nymphaea candida K. Presl	Kleine Seerose	small pond lily
Nymphoides peltata (S.G. Gmel.) O. Kuntze	Seekanne	water fringe
*Omphalodes littoralis Lehm.	Strand-Gedenkemein	shore navelwort
*Ononis maweana Ball	Mawes Hauhechel	Mawe's restharrow
*Ononis megalostachys Munby	Grossaehrige Hauhechel	great restharrow
*Onopordum algeriense (Munby) Pomel	Algerische Eselsdistel	Algerian cotton thistle
*Onopordum cyrenaicum Maire & M. Weiller	Libysche Eselsdistel	Libyan cotton thistle

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
*Onosma arenaria Waldstein & Kitaibel	Sand-Lotwurz	sand yellow oxtongue
*Onosma elegantissima Rech. fil. & Goulimy	Zierliche Lotwurz	delicate yellow oxtongue
*Onosoma pseudarenaria Schur	Rumaenische Lotwurz	Romanian yellow oxtongue
Onosma spp.	Lotwurz	yellow oxtongue -all European species not individually listed
Orchidaceae spp.	Orchideen	orchids -all non-European species not individually listed of the subfamilies and tribes Calypsoeae Cyripedioideae Malaxideae Neottioideae Orchidoideae Spiranthoideae EXCEPT: artificially reproduced hybirds and artificially reproduced plants of the genera: Disa, Haemaria, Macodes, Spiranthes, Stenorhynchos, and artificially reproduced hybrids of the genus Phragmipedium
Osmunda regalis L.	Koenigsfarn	king fern
*Oxytropis deflexa (Pallas) DC.	Gekruemmte Fahnenwicke	curved banner vetch
Oxytropis pilosa (L.) DC.	Zottige Fahnenwicke	shaggy banner vetch
Pachypodium spp. -all species, EXCEPT: Pachypodium geayl Cost. et Bois Pachypodium lameral Drake Pachypodium saundersil N.E. Br.		
Paeonia spp.	Pfingstrose	peony -all European species
Pancratium maritimum L.	Strand-Pankrazlilie	sea pancratic lily
Papaver sendtner Kern. ex Hayek	Sendtners Alpen-Mohn	Sendtner's alpine poppy
Paphiopedilum spp.	Venusschuh-orchideen	Venus's slipper orchids -all species

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
Paradisea liliastrum (L.) Bertol.	Trichterlilie	funnel lily
Parnassia palustris L.	Sumpf-Herzblatt	marsh heatleaf
*Pedicularis numidica Pomel	Algerisches Laeusekraut	Algerian lousewort
*Pedicularis sceptrum-carolinum L.	Karlszepter	carline scepter
Pedicularis spp.	Laeusekraut	lousewort -all native species not individually listed
Petrocallis pyrenaica (L.) R. Br.	Pyrenaeen-Steinschnueckel	Pyrenees stone jewel
Phlomis brevibracteata Turrill	Kurzdeckblatt-Brandkraut	short bract lampwick
Phlomis cypria Post	Zyprisches Brandkraut	Cyprian lampwick
Phylitis scolopendrium (L.)Newm.	Hirschzunge	hart's tongue
Pinguicula alpina L.	Alpen-Fettkraut	Alpine butterwort
*Pinguicula crystallina Sibth. & Smith	Kristall-Fettkraut	crystal butterwort
Pinguicula vulgaris L.	gewoehnliches Fettkraut	common butterwort
Polemonium caeruleum L.	Blaue Himmelsleiter	blue Jacob's ladder
Polystichum spp.	Schildfarn	shield fern -all native species
*Primula apennina Widmer	Apenninen-Primel	Apennine primrose
*Primula egaliksensis Wormsk.	Island-Primel	island primrose
Primula spp.	Primel, Schluesselblume	primrose, cowslip -all European species not individually listed, EXCEPT:
Primula elatior (L.) Hill	Hohe Schluesselblume	high cowslip
Primula veris L.	Wiesen-Schluesselblume	meadow cowslip
*Pterocephalus virens Berthel.	Gruenender Fluegelkopf	verdant pterocephalus
*Ptilotrichum pyrenaicum (Lapeyr.) Boiss.	Pyrenaeen-Haarfeder	Pyrenees ptilotrichum
*Pulicaria burchardii Hutch.	Burchards Flohkraut	Burchard's fleabane
*Pulicaria canariensis Bolle	Kanarisches Flohkraut	Canary fleabane
Pulmonaria angustifolia L.	Schmalblaettriges Lungenkraut	narrow-leafed lungwort
Pulmonaria mollis Wulfen ex Hornem.	Weiches Lungenkraut	soft lungwort
Pulmonaria montana Lejeune	Berg-Lungenkraut	mountain lungwort
*Pulsatilla patens (L.) Miller	Finger-Kuechenschelle	finger pasque-flower
*Pulsatilla pratensis (L.) Miller	Wiesen-Kuechenschelle	meadow pasqueflower
*Pulsatilla vernalis (L.) Miller	Fruehlings-Kuechenschelle	spring pasqueflower

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
Pulsatilla spp.	Kuechenschelle	pasqueflower -all species not individually listed
Ranunculus kykkoensis Meikle	Kykko-Hahnenfuss	Kykko buttercup
Ranunculus lingua L.	Zungen-Hahnenfuss	tongue buttercup
*Ranunculus radinotrichus Greuter & Strid	Zartbehaarter Hahnenfuss pubescent buttercup	delicately
*Ranunculus weyleri Mares	Weylers Hahnenfuss	Weyler's buttercup
Rheum rhaponticum L.	Pontischer Rhabarber	Pontish rhubarb
Rhododendron ferrugineum L.	Rostblaettrige Alpenrose	rust-leafed alpine rose
Rhododendron hirsutum L.	Rauhblaettrige Alpenrose	asperifoliate alpine rose
Rhodothamnus chamaecistus (L.) Rchb.	Zwergalpenrose	dwarf rosebay
*Rhynchosinapis johnstonii (G. Samp.) Heywood	Johnstons Schnabelsenf	Johnston's rose mustard
*Ribes sardoum Martelli	Sardinische Stachelbeere	Sardinian gooseberry
Rubus chamaemorus L.	Moltebeere	cloudberry
*Rupicapnos africana (Lam.) Pomel	Afrikanischer Felsenerdrauch	African rock fumitory
*Salicornia veneta Pignatti & Lausi	Venezianischer Queller	Venetian glasswort
Salvia veneris Hedge	Dickblaettriger Salbei	thick-leafed sage
*Salvinia natans (L.) All.	Schwimmfarn	floating fern
Sarracenia spp. -all species		
*Saxifraga hirculus L.	Moor-Steinbrech	marsh breakstone
Saxifraga spp.	Steinbrech	breakstone -all species not individually listed, **EXCEPT**:
Saxifraga tridactylites L.	Finger-Steinbrech	finger breakstone
Scheuchzeria palustris L.	Blasenbinse	blow rush
*Scilla morrisii Meikle	Morris' Blaustern	Morris' bluebell
Scilla spp. (Incl. Endymion)	Blaustern, Hasengloeckchen	bluebell, incl. rabbit bellflower
Scorzonera austriaca Willd.	Oesterreichische Schwarzwurzel	Austrian viper's grass
*Scorzonera drarii Taeckh.	Drars Schwarzwurzel	Drar's viper's grass
Scorzonera hispanica L.	Spanische Schwarzwurzel	Spanis viper's grass
Scorzonera humilis L.	Niedrige Schwarzwurzel	low viper's grass
*Scorzonera purpurea L.	Violette Schwarzwurzel	violet viper's grass
Sempervivum spp. (incl. Jovibarba spp.)	Hauswurz (Fransenhauswurz)	houseleek (incl. fringed houseleek
Senecio carniolicus Willd.	Krainer Greiskraut	Krainer fleabane
*Senecio hadrosomus Svent.	Gran-Canaria-Greiskraut	Grand Canary fleabane

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
Senecio hermosae Pitard	Hermosatal-Greiskraut	Hermosan fleabane
Sideritis cypria Post	Zyprisches Gliedkraut	Cyprian joint plant
*Sideritis cystosiphon Svent.	Versteckbluetiges Gliedkraut	spongy joint plant
*Sideritis discolor (Webb ex DeNoe) Bolle	Zweifarbiges Gliedkraut	two-color joint plant
*Sideritis infernalis Bolle	Hoellenschlucht-Gliedkraut	hell-gorge joint plant
*Sideritis nervosa (Christ) Lid	Starknerviges Gliedkraut	strong-nerved joint plant
*Silene orphanidis Boiss.	Leere Lichtnelke	hollow campion
*Silene rothmaleri Pinto da Silva	Rothmalers Lichtnelke	Rothmaler's campion
*Silene velutina Pourret ex Loisel.	Samt-Lichtnelke	dusty miller
*Solanum lidii Sunding	Lids Nachtschatten	Lid's nightshade
*Solanum trisectum Dunal	Dreischnittiger Nachtschatten	trifid nightshade
Soldanella spp.	Troddelblume	soldanel -all native species
Solenanthus albanicus	Albanischer Riesenboretsch	Albanian giant borage
*Sonchus bornmuelleri Pitard	Bornmuellers Gaensedistel	Bornmueller's milkweed
*Stipa bavarica Martinovsky & H. Scholz	Bayerisches Federgrass	Bavarian feather grass
Stipa spp.	Federgrass, Pfriemengras	feather grass, matweed -all European species not individually listed
*Stipagrostis drarii (Taeckh.) DeWinter	Drars Grannen-Straussgras	Drari's bearded bent grass
Stratiotes aloides L.	Krebsschere	water soldier
Swertia perennis L.	Blauer Sumpfstern	blue bog star
*Symphytum cycladense Pawt.	Kykladen-Beinwell	cycladic comfrey
*Tanacetum ptarmici-florum (Webb) Schultz-Bip.	Silbergrauer Rainfarn	silver-gray parsley
Taxus baccata L.	Eibe	yew
*Teline benehoavensis (Bolle ex Svent.) Santos	La-Palma-Teline	Canary teline
*Teline linifolia (L.) Webb & Berthel. subsp. teneriffae P.E. Gibbs & Dingwall	Teneriffa-Teline	Teneriffe teline
*Thymus camphoratus Hoffmanns. & Link	Kampfer-Thymian	camphor thyme
*Thymus carnosus Boiss.	Fleischiger Thymian	fleshy thyme

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
*Thymus cephalotos L.	Grosskoepfiger Thymian	big-headed thyme
Trapa natans L.	Wassernuss	water foot
Trollius europaeus L.	Trollblume	globe flower
*Tuberaria major (Willk.) Pinto da Silva & Rozeira	Grosses Sandroeschen	greater sand rose
Tulipa spp.	Tulpe	tulip -all species
Turbinicarpus spp. -all species		
Uebelmannia spp.	Uebelmanns Kakteen	Uebelmann's cacti -all species
*Utricularia bremii Heer	Bremis Wasserschlauch	Bremi's bladderwort
Utricularia ochroleuca Hartm.	Ockergelber Wasserschlauch	ocher-yellow bladderwort
Valeriana longiflora Willk.	Langbluetiger Baldrian	long-flowered valerian
Veronica longifolia L.	Langlaettriger Ehrenpreis	long-leafed speedwell
Veronica spicata L.	Aehriger Ehrenpreis	spiked speedwell
Viola calaminaria (Ging. in DC.) Lejeune	Gelbes Galmei-Veilchen	calamine violet
Viola calcarata L.	Gesporntes Veilchen	spurred pansy
*Viola guestphalica Nauenburg	Violettes Galmei-Veilchen	Westphalian calamine violet
*Viola hispida Lam.	Steifhaariges Veilchen	shaggy violet
*Viola jaubertiana Mares & Vigineix	Jauberts Veilchen	Jaubert's violet
*Viola palmensis Webb & Berthel.	La-Palma-Veilchen	La Palma violet
*Vitis sylvestris C.C. Gmelin	Wilde Weinrebe	wild grape vine
Wahlenbergia hederacea (L.) Rchb.	Efeu-Moorgloeckchen	Efeu marsh bellflower
Withania aristata (Aiton) Pers.	Stumpfblaettrige Withania	stump-leafed withania
Woodsia spp.	Wimperfarn	eyelash fern -all native species
Wulfenia carinthiaca Jacq.	Kaerntner Kuhtritt	Carinthian cowstep
Androsace spp.	Mannsschild	Man's shield -all native species, **EXCEPT:**
Androsace elongata L.	Verlaengter Mannsschild	extended androsace
Androsace maxima L.	Riesen-Mannsschild	giant androsace
Androsace septentrionalis L.	Nordischer Mannsschild	norther androsace

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
BRYOPHYTA	MOOSE	MOSSES
Dicranum spp.	Gabelzahnmoos	fork-tooth mosses -all native species
Hylocomium spp.	Hainmoos	grove mosses -all native species
Polytrichum commune Hedwig	Frauenhaarmoos	maidenhair moss
Polytrichum formosum Hedwig	Schoenes Haarmuetzenmoos	beautiful haircap moss
Rhytidiadelphus spp.	Kranzmoos	garland mosses -all native species
Sphagnum spp.	Torfmoos	peat mosses -all native species
LICHENES	FLECHTEN	LICHENS
Anaptychia spp.	Wimperflechte	eyelash lichens -all native species
Cetraria islandica (L.)	Islaendisch Moos, Islandflechte	Iceland moss/lichen
Cetraria spp.	Moosflechte	moss lichens -all native species not individually listed
Cladina spp. (Cladonia Sect. Cladina)	Rentierflechte	Reindeer lichens -all native species not individually listed
*Lobaria plumonaria (L.) Hoffm.	Echte Lungenflechte	true lungwort
Lobaria spp.	Lungenflechte	lungworts -all native species not individually listed
Parmelia spp.	Schuesselflechte	parmelia
Usneaceae spp.	Bartflechte	bearded lichens -all native species
FUNGI	PILZE	FUNGI
Albatrellus spp.	Schaf-Porling, Semmel-Porling	sheep mushroom, bread mushroom -all native species
Amanita caesarea (Scop. ex Fr.) Pers. ex Schw.	Kaiserling	imperial mushroom
Boletus aereus Bull. ex Fr.	Weisser Bronze-Roehrling	white bronze bolete
Boletus appendiculatus Schff. ex Fr.	Gelber Bronze-Roehrling	yellow bronze bolete
Boletus edulis Bull. ex Fr.	Steinpilz	edible boletus
Boletus fechtneri Vel.	Sommer-Roehrling	summer bolete

Table 4-1 (continued)

Latin Name	German Common Name	English Common Name
Boletus regius Krbh.	Echter Koenigs-Roehrling	true king bolete
Boletus speciosus Frost	Blauender Koenigs-Roehrling	blue king bolete
Cantharellus spp.	Pfifferling	chanterelle -all native species
Gomphus clavatus (Pers. ex Fr.) S.F. Gray	Schweinsohr	pig's ear
Gyrodon lividus (Bull. ex Fr.) Sacc.	Erlen-Gruebling	alder truffle
Hygrocybe spp.	Saftling	hygrocube -all native species
Hygrophorus marzuolus (Fr.) Bres.	Maerz-Schneckling	March snail mushroom
Lactarius volemus Fr.	Braetling	lacteous agaric
Leccinum spp.	Birkenpilz und Rotkappe	rough-stemmed boletus, red boletus -all native species
Morchella spp.	Morchel	morel -all native species
Tricholoma flavovirens (Pers. ex Fr.) Lund & Nannf.	Gruenling	green agaric
Tuber spp.	Trueffel	truffle -all native species

Table 4-2

Game That May Be Legally Hunted

These animal species fall within the scope of the *Bundesjagdgesetz* and may therefore be hunted legally (Bundesjagdgesetz, Section 2):

Wisent (Bison bonasus L.) European bison
Elchwild (Alces alces L.) elk
Rotwild (Cervus elaphus L.) deer
Damwild (Dama dama L.) fallow deer
Sikawild (Cervus nippon TEMMINCK) Japanese deer
Rehwild (Capreolus capreolus L.) roe deer
Gamswild (Rupicapra rupicapra L.) chamois
Steinwild (Capra ibex L.) ibex
Muffelwild (Ovis ammon musimom PALLAS) mufflon
Schwarzwild (Sus scrofa L.) wild boar
Feldhase (Lepus europaeus PALLAS) brown hare
Schneehase (Lepus timidus L.) white hare
Wildkaninchen (Oryctolagus cuniculus L.) (wild) rabbit
Murmeltier (Marmota marmota L.) marmot
Wildkatze (Felis silvestris SCHREBER) wildcat
Luchs (Lynx lynx L.) lynx
Fuchs (Vulpes vulpes L.) fox
Steinmarder (Martes foina ERXLEBEN) stone marten
Baummmarder (Martes martes L.) tree (or pine) marten
Iltis (Mustela putorius L.) polecat
Hermelin (Mustela erminea L.) ermine
Mauswiesel (Mustela nivalis L.) white weasel
Dachs (Meles meles L.) badger
Fischotter (Lutra lutra L.) old world otter
Seehund (Phoca vitulina L.) harbor seal.

Table 4-2 (continued)

These fowl fall within the scope of the *Bundesjagdgesetz* and may therefore be hunted legally (Bundesjagdgesetz, Section 2):

Rebhuhn (Perdix perdix L.) gray partridge

Fasan (Phasianus colchicus L.) pheasant

Wachtel (Coturnix coturnix L.) quail

Auerwild (Tetrao urogallus L.) wood grouse

Birkwild (Lyrus tetrix L.) black grouse

Rackelwild (Lyrus tetrix x Tetrao urogallus) cross between male heath cock and female wood grouse

Haselwild (Tetrastes bonasia L.) hazel grouse

Alpenschneehuhn (Lagopus mutus MONTIN) rock ptarmigan

Wildtruthahn (Meleagris gallpavo L.) wild turkey

Wildtauben (Columbidae) wild pigeons

Hoeckerschwan (Cygnus olor GMEL.) mute swan

Wildgaense (genera Anser BRISSON and Branta SCOPOLI) wild geese

Wildenten (Anatinae) wild ducks

Saeger (genus Mergus L.) merganser

Waldschnepfe (Scolopax rusticola L.) woodcock

Blaesshuhn (Fulica atra L.) coot

Moewen (Laridae) seagulls

Haubentaucher (Podiceps cristatus L.) great crested grebe

Grosstrappe (Otis tarda L.) great bustard

Graureiher (Ardea cincerea L.) European heron

Greife (Accipitridae) hawks and related forms

Falken (Falconidae) falcons

Kolkrabe (Corvus corax L.) common raven.)

Table 4-3

List of Protected Species

It is illegal to take possession of, to acquire, to exercise actual force over, to work on, to process, or otherwise to use individuals of the following species, or to dispose of them, offer them for sale, to transfer them, or otherwise introduce them into commerce, or to transport them for those purposes:

Steinwild (Capra ibex L.) ibex

Schneenase (Lepus timidus L.) white hare

Murmeltier (Marmota marmota L.) marmot

Seehund (Phoca vitulina L.) harbor seal

Rebhuhn (Perdix perdix L.) gray partridge

Fasan (Phasianus colchicus L.) pheasant

Wachtel (Coturnix coturnix L.) quail

Auerwild (Tetrao urogallus L.) wood grouse

Birkwild (Lyrurus tetrix L.) black grouse

Rackelwild (Lyrurus tetrix x Tetrao urogallus) cross between male heath cock and female wood grouse

Haselwild (Tetrastes bonasia L.) hazel grouse

Alpenschneehuhn (Lagopus mutus MONTIN) rock ptarmigan

Wildtruthuhn (Meleagris gallopavo L.) wild turkey

Hohltaube (Columba oenas L.) stock dove

Ringeltaube (Columba palumbus L.) wood pigeon

Turteltaube (Streptopelia turtur L.) turtle dove

Tuerkentaube (Streptopelia decaocto FRIVALDSKY) collared dove

Hoeckerschwan (Cygnus olor GMELIN) mute swan

Graugans (Anser anser L.) greylag

Blaessgans (Anser albifrons SCOPOLI) white-fronted (or laughing) goose

Saatgans (Anser fabalis LATHAM) bean goose

Kurzschnabelgans (Anser brachyrhynchos BAILLON) pink-footed goose

Ringelgans (Branta bernicla L.) brent goose

Weisswangengans (Branta leucopsis BECHSTEIN) barnacle goose

Kanadagans (Branta canadensis L.) Canada goose

Stockente (Anas platyrhynchos L.) mallard

Loeffelente (Anas clypeata L.) shoveler

Schnatterente (Anas strepera L.) gadwall

Pfeifente (Anas penelope L.) European widgeon

Krickente (Anas crecca L.) common teal

Spiessente (Anas acuta L.) pintail
Kolbenente (Netta rufina PALLAS) red-crested pochard
Bergente (Aythya marila L.) scaup
Reiherente (Aythya fuligula L.) tufted duck
Tafelente (Aythya ferina L.) pochard
Schellente (Bucephala clangula L.) goldeneye
Brandente (Tadorna tadorna L.) sheldrake
Eisente (Clangula hyemalis L.) long-tailed duck
Samtente (Melanitta fusca L.) velvet scoter
Trauerente (Melanitta nigra L.) black scoter
Gaesesaeger (Mergus merganser L.) common merganser
Zwergsaeger (Mergus albellus L.) smew
Waldschnepfe (Scolopax rusticola L.) woodcock
Blaesshuhn (Fulica atra L.) coot
Mantelmoewe (Larus marinus L.) great black-backed gull
Heringsmoewe (Larus fuscus L.) gray gull
Silbermoewe (Larus argentatus PONTOPPIDAN) silver gull
Sturmmoewe (Larus canus L.) common gull
Lachmoewe (Larus ridibundus L.) black-headed gull
Schwarzkopfmoewe (Larus melanocephalus TEMMINCK) Mediterranean gull
Zwergmoewe (Larus minutus PALLAS) little gull
Dreizehenmoewe (Rissa tridactyla L.) kittiwake
Haubentaucher (Podiceps cristatus L.) great crested grebe
Graureiher (Ardea cinerea L.) European heron
Kolkrabe (Corvus corax L.) common raven

Table 4-4

Activities Prohibited in the Interest of Species and Habitat Protection

The following activities are prohibited in the State of Rheinland-Pfalz in the interests of protecting wild plant and animal species and their habitats:

1. wantonly disturbing wild animals and capturing, wounding, or killing them for no good reason
2. removing wild plants from their habitat for now good reason, or using them, cutting stands of them down, or otherwise destroying them
3. impairing or destroying the habitats of wild plant or animal species for no good reason
4. removing, destroying, damaging, or changing the characteristic condition of reed swamps, other stands of reeds, large sedge reeds, or small sedge swamps
5. removing, destroying, damaging or changing the characteristic condition of fenwoods and low-land forests that are regularly flooded at least every 3 yr
6. removing, destroying, damaging, or changing the characteristic condition of juniper heaths or dwarf Genista heaths, or of plots of matweed and arnica
7. removing, destroying, damaging, or changing the characteristic condition of high moors or intermediate moors, moorlands, and moor forests
8. removing, destroying, damaging, or changing the characteristic condition of dunes and sandy areas (Sand- rasen)
9. removing, damaging, destroying, or changing the characteristic condition of vegetation-covered rocky outcroppings, dry meadows, and those where gentian or orchids grow
10. removing, damaging, destroying, or changing the characteristic condition of wet meadows rich in sedges, rushes, or high perennial herbs, as well as of headwater regions, parts of rivers and streams that are unobstructed and in their natural state, and areas of standing waters where deposition is occurring
11. removing, damaging, destroying, or changing the characteristic condition of loose rocky slopes or woods in ravines
12. clear-cutting, cutting, pruning, or burning off hedges or bushes in the period from 1 March to 30 September
13. burning off the covering of meadows, field ravines, fallow land, slopes, or hedges
14. burning off large areas of stubble fields.

(NOTE: The lower-level land management authority may grant exceptions in particular cases to the prohibitions in 12 through 14 for weighty reasons.)

Table 4-5

Times and Places Where the Gathering of Roman Snails (Helix pomatia) is Permitted

In 1982 and every third subsequent year (1985, 1988, etc.) in the following areas:

Koblenz	Landkreise Bad Kreuznach, Birkenfeld, Rhein-Hunsrueck-Kreis
Trier	Landkreise Bitburg-Pruem, Daun
Rheinhessen-Pfalz	Landkreise Alzey-Worms, Kusel, Mainz-Bingen, and the cities of Mainz and Worms

In 1983 and every third subsequent year (1986, 1989, etc.) in the following areas:

Koblenz	Landkreise Altenkirchen (Westerwald), Neuwide, Rhein-Lahn-Kreis, Westerwald-kreis
Trier:	Landkreis Trier-Saarburg and the city of Trier
Rheinhessen-Pfalz:	Landkreise Germersheim, Kaiserslautern, Pirmasens, Suedliche Weinstrasse, and the cities of Kaiserslautern, Landau in der Pfalz, Neustadt an der Weinstrasse, Pirmasens, and Zweibruecken

In 1984 and every third subsequent year (1987, 1990, etc.) in the following areas:

Koblenz	Landkreise Ahrweiler, Cochem-Zell, Mayen-Koblenz, and the city of Koblenz
Trier:	Landkreis Bernkastel-Wittlich
Rheinhessen-Pfalz:	Landkreise Bad Duerkheim, Donnersberg-kreis, Ludwigshafen, and the cities of Ludwigshafen am Rhein, Frankenthal (Pfalz), and Speyer

INSTALLATION:	COMPLIANCE CATEGORY: NATURAL AND CULTURAL RESOURCES MANAGEMENT German	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) Natural Resources Manager (or Environmental Coordinator) (2) Historic Preservation Officer (or Environmental Coordinator)

Section 5

ENVIRONMENTAL NOISE MANAGEMENT

A. Applicability

Since it can be expected that noise will be produced as a regular part of the activities that take place on any Air Force installation, this section of the manual applies to all installations.

B. National Laws and Regulations

Broadly speaking, German laws and regulations that are related to noise control can be organized on the basis of whether they deal with kinds of facilities, with vehicles, or with other pieces of equipment.

- The **Bundesimmissionsschutzgesetz** (*Federal Immission Control Act* (BImSchG)) of 22 May 1990, which is relevant to immissions of many sorts, includes noise in its scope. It explicitly gives regulatory force to the **Technische Anleitung zum Schutz gegen Laerm** (Technical Introduction to Noise Control) of 26 July 1968, known as *TA Laerm*, until such time as that document is replaced by one based on the most recent version of the BImSchG. *TA Laerm* applies to those facilities that require permits under the *Federal Immission Control Act* and sets immissions guide values that must be complied with by such facilities. Those guide values are, broadly speaking, dependent on the kind of activity (i.e., residential, commercial) that takes place in any given area. *TA Laerm* also contains a discussion of the procedures and equipment used in taking measurements of noise levels.

- The **18. Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Sportanlagenlaermschutzverordnung -- 18. BImSchV)** (The 18th Regulation Implementing the *Federal Immission Control Act* (Sports Facilities Noise Regulation)) sets out noise immission limits for sports facilities.

- The **Gesetz zum Schutz gegen Fluglaerm** (*Air Traffic Noise Control Act*) is chief among the pieces of legislation that are relevant to noise control for aircraft. It sets up noise control districts around commercial airports and around military airports that service airplanes with jet-engines. Noise control districts may consist of two zones, and regulations determine what sorts of buildings can be in what zones.

- Noise control districts have been established by the federal government around these military airports in Rheinland-Pfalz: Bitburg, Hahn, Ramstein, Sembach, and Spangdahlem. The following regulations are relevant:
  - **Verordnung ueber die Festsetzung des Laermschutzbereichs fuer die militaerischen Flugplaetze Bitburg und Spangdahlem** (1978)
  - **Verordnung ueber die Festsetzung des Laermschutzbereichs fuer den militaerischen Flugplatz Hahn** (1977)
  - **Verordnung ueber die Festsetzung des Laermschutzbereichs fuer den militaerischen Flugplatz Ramstein** (1976)
  - **Verordnung ueber die Festsetzung des Laermschutzbereichs fuer den militaerischen Flugplatz Sembach** (1985).

  The noise control districts are defined on the basis of lines drawn through points given in Gauss-Krueger coordinates. A list of the coordinates and a reduction of the map that demarcates the control district are part of the ordinance that establishes a control district, and full-size official maps are on deposit at the following locations:
  - For Ramstein: at the Kreisverwaltung Kaiserslautern
  - For Hahn: at the Kreisverwaltung des Rhein-Hunsrueck-Kreises in Simmern (Hunsrueck)
  - For Bitburg and Spangdahlem: at the Kreisverwaltung Bitburg-Pruem in Bitburg
  - For Sembach: at the Kreisverwaltung Kaiserslautern.

- The **Luftverkehrgesetz** (*Air Traffic Act* -- LuftVG) is also relevant to noise immissions produced by aircraft. It lays out the general principles that the generation of avoidable noise is to be prevented and that the spread of unavoidable noise is to be kept to a minimum. Particular attention is to be paid to the preservation of night-time quiet.

- The **Luftverkehrs-Zulassungs-Ordnung** (Air Traffic Licensing Regulation -- LuftVZO) lays out the general principle that the noise that is caused as a consequence of the operation of an aircraft may not be louder than is necessary for the proper operation or control of it. Under the provisions of this act, German aircraft must receive noise permits from a licensing authority. The provisions of the act (Section 10(4)) explicitly allow recognition of noise licenses or similar documents issued by non-German agencies as long as those documents contain the information that is required in the German documents and meet certain standards for effective perceived noise that are contained in the LuftVZO.

- The **Gesetz ueber die Umweltvertraeglichkeitspruefung** (UVPG) (*Environmental Impact Statement Act*) requires that environmental impact studies be done prior to the construction of or substantial modification to certain types of

facilities under certain conditions. U.S. forces in Germany are permitted to substitute an environmental review for full-blown environmental impact statements.

- The **Laermgrenzwerte fuer Propellerflugzeuge bis 5700 kilogram (kg) Hoechstgewicht und fuer Motorsegler** (Noise Limits for Propeller-driven Aircraft with a maximum weight of 5700 kg and for Power Gliders) lists acceptable noise emission limits for such aircraft and includes an appendix that details how those limits are to be established.

- The **Verordnung ueber die zeitliche Einschraenkung des Flugbetriebs mit Leichtflugzeugen und Motorseglern an Landeplaetzen** (Regulation Restricting Flying Times for Light Aircraft and Power Gliders at Landing Fields) restricts the times when certain types of noncommercial, civil flights may occur.

- The **Strassenverkehrs-Ordnung** (Street- and Road-traffic Regulation (StVO)) lays out the general principle that unnecessary noise caused in the course of the use of motor vehicles is prohibited. This includes leaving the vehicle idling unnecessarily and closing the vehicle's doors unnecessarily loudly. The regulation also puts restrictions on the days and times on which trucks of a certain weight may be used.

- The **Strassenverkehrs-Zulassungs-Ordnung** (Street- and Road-traffic Licensing Regulation -- StVZO) incorporates the following EEC Directives on permissible noise levels and mufflers into the set of German regulatory instruments:
    1. Council Directive 70/157/EEC of 6 February (L 42, p 16) as amended in Council Directive 84/424/EEC of 3 September 1984 (L 238, p 31), on the permissible noise level and exhaust equipment of motor vehicles
    2. Council Directive 74/151/EEC of 4 March 1974 (L 84, p 25) on the component parts and features of wheeled tractors used in agriculture or silviculture, as amended in Council Directive 82/890/EEC of 17 December 1982 (L 378, p 45)
    3. Council Directive 78/1015/EEC of 23 November 1978 on the permissible noise level and exhaust equipment of motorcycles (L 349, p 21), as amended in Council Directive 87/56/EEC of 18 December 1986 (L 24, p 42).

  Motor vehicles and their trailers for which permissible noise levels are established in those directives must comply with their provisions. Please refer to the EC Supplement to the Worldwide Manual.

- The **2. Allgemeine Verwaltungsvorschrift zum Bundesimmissionsschutzgesetz (Emissionswerte fuer Krane -- 2. BImSchVwV)** (Second General

Administrative Provision on the *Federal Immission Control Act* (Emission Figures for Cranes)) contains emission figures for the noise emitted by construction cranes during their operation.

- The **3. Allgemeine Verwaltungsvorschrift zum Bundesimmissionsschutzgesetz (Emissionswerte fuer Drucklufthaemmer -- 3. BImSchVwV)** (Third General Administrative Provision on the *Federal Immission Control Act* (Emission Figures for Pneumatic Hammers)) sets emission figures for pneumatic hammers that are a function of their weight.

- The **8. Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Rasenmaeherlaerm-Verordnung -- 8. BImSchV)** (Eighth Regulation Implementing the *Federal Immission Control Act* (Lawnmower Noise Regulation)) sets permissible noise production levels for lawnmowers that depend upon the width of the swaths they cut. It also sets restrictions on the times when lawnmowers may legally be used.

C. State Laws and Regulations -- Rheinland-Pfalz

- The **Landesverordnung zur Bekaempfung des Laerms** (State Noise Control Ordinance) is an act of broad scope. It contains provisions that define and protect the night-time quiet period, and others that apply to the proper use and operation of motor vehicles, lawnmowers and garden machinery, sound reproduction equipment, and even musical instruments.

D. Key Compliance Definitions

- *Day* - the period between 0600 and 2200 hours (h) on workdays; 'day' on Sundays and holidays is defined as the time between 0700 and 2200 h (18. BImSchV, Section 2(5)).

- *Holidays* - the following days are considered holidays:
  - New Year's Day
  - Good Friday
  - Easter Monday
  - May Day
  - Ascension Day
  - Monday after Pentecost
  - Corpus Christi (in Baden-Wuerttemberg, Bavaria, Hessen, Nordrhein-Westfalen, Rheinland-Pfalz, and Saarland)
  - June 17
  - All Saints' Day (1 November) (in Baden-Wuerttemberg, Bavaria, Hessen, Nordrhein-Westfalen, Rheinland-Pfalz, and Saarland)

Buss- und Bettag
December 25 and 26
(StVO, Section 30(5)).

- *Immissions* - the effect on neighbors or third parties of sound emitted by a facility (TA Laerm, 2.1).

- *Lawnmowers* - motor-driven appliances intended for the cutting of grass, regardless of how that cutting is actually accomplished (8. BImSchV, Section 1).

- *Light planes* - planes that weigh up to 2000 kg (Verordnung ueber die zeitliche Einschraenkung des Flugbetriebs mit Leichtflugzeugen und Motorseglern an Landeplaetzen, Section 1).

- *Night* - on work days, the periods between 000 and 0600 h and 2200 and 2400 h. On Sundays and holidays, the periods between 000 and 0800 h and 2200 and 2400 h (18. BImSchV, Section 2(5)).

- *Noise* - sound that can or could disturb (endanger, significantly disadvantage, or significantly annoy) neighbors or third parties (TA Laerm, 2.1).

- *Noise control district* - set up around airports that serve commercial air traffic and around military airports that service airplanes with jet engines. The noise control district encompasses that area outside the airfield where the equivalent continuous noise level caused by airplane noise exceeds 67 dB(A). This area is divided into two zones. Control Zone One is that area where the equivalent continuous noise level exceeds 75 dB(A); Control Zone Two is made up of the remaining areas in the noise control district (Gesetz zum Schutz gegen Fluglaerm, Sections 1 and 2).

- *Quiet period* - The periods between 0600 and 0800 h and 2000 and 2200 h on work days. On Sundays and holidays it encompasses these times of day: 0700 to 0900 h, 1300 to 1500 h, and 2000 to 2200 h.

- *Sports facility* - permanent facilities that are intended to be used when engaging in sport. Facilities that have close spatial and operational relationships to a sports facility are considered to be sports facilities. The times when motor and/or pedestrian traffic comes to and departs from the facility count as times when the facility is being used (18. BImSchV, Section 1).

ENVIRONMENTAL NOISE MANAGEMENT

GUIDANCE FOR CHECKLIST USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(*)
All Installations	5-1 through 5-22	(1)(2)
Rheinland-Pfalz Noise Control	5-23 through 5-33	(1)(3)(4)

(*) CONTACT/LOCATION CODE:

(1) BCE (Base Civil Engineering (Environmental/Community Planning))
(2) Deputy for Operations (Air Space Manager)
(3) Public Affairs Office
(4) Range Operating Agency

ENVIRONMENTAL NOISE MANAGEMENT

Records to Review

- Facility Master Plan Document
- Complaint log from local community

Physical Features to Inspect

- Power generators or other noise
- Emergency generators
- Test tracks

Sources to Interview

- BCE (Base Civil Engineering (Environmental/Community Planning))
- Deputy for Operations (Air Space Manager)
- Public Affairs Office
- Range Operating Agency

COMPLIANCE CATEGORY: ENVIRONMENTAL NOISE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL INSTALLATIONS	
5-1. Determine actions or changes since previous review of noise management (GMP).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report. (1)
...	...
5-2. Installations should maintain a file of German laws and regulations pertaining to noise management (GMP).	Verify that copies of the following federal laws and regulations are kept at the installation: (1) - *Technische Anleitung zum Schutz gegen Laerm, (TA Laerm).* - *18. Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Sportanlagenlaermschutzverordnung), (18. BImSchV).* - *Gesetz zum Schutz gegen Fluglaerm.* - *Luftverkehrgesetz, (LuftVG).* - *Luftverkehrs-Zulassungs-Ordnung, (LuftVZO).* - *Gesetz ueber die Umweltvertraeglichkeitspruefung (UVPG)* - *Laermgrenzwerte fuer Propellerflugzeuge bis 5700 kg Hoechstgewicht und fuer Motorsegler.* - *Verordnung ueber die zeitliche Einschraenkung des Flugbetriebs mit Leichtflugzeugen und Motorseglern and Landeplaetzen.* - *Strassenverkehrs-Ordnung, (StVO).* - *Strassenverkehrs-Zulassungs-Ordnung, (StVZO).* - *2. Allgemeine Verwaltungsvorschrift zum Bundesimmissionsschutzgesetzes (Emissionswerte fuer Krane), (2. AVwV zum BImSchG).* - *3. Allgemeine Verwaltungsvorschrift zum Bundesimmissionsschutzgesetzes (Emissionswerte fuer Drucklufthaemmer), (3. AVwV zum BImSchG).* - *8. Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Rasenmaeherlaerm-Verordnung), (8. BImSchV).* Verify that a copy of the following state law for Rheinland-Pfalz is kept at the installation: - *Landesverordnung zur Bekaempfung des Laerms, (Laermschutzverordnung).* Verify that a copy of one of the following federal regulations is kept at whichever installation is referred to in the title: - *Verordnung ueber die Festsetzung des Laermschutzbereichs fuer die militaerischen Flugplaetze Bitburg und Spangdahlem* - *Verordnung ueber die Festsetzung des Laermschutzbereichs fuer den militaerischen Flugplatz Hahn* - *Verordnung ueber die Festsetzung des Laermschutzbereichs fuer den militaerischen Flugplatz Ramstein* - *Verordnung ueber die Festsetzung des Laermschutzbereichs fuer den militaerischen Flugplatz Sembach.*
...	...

(1) BCE (Base Civil Engineering (Environmental/Community Planning)) (2) Deputy for Operations (Air Space Manager) (3) Public Affairs Office (4) Range Operating Agency

COMPLIANCE CATEGORY: ENVIRONMENTAL NOISE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-3. An environmental review must be filed prior to construction of or substantial modification to certain facilities (UVPG, Section 3(1)).	Verify that environmental reviews are submitted prior to the construction of or significant modification to airports that require official approval of a plan under the terms of the *Air Traffic Act*. (1)
...	...
5-4. Facilities that require a permit under Section 4 of the *Federal Immission Control Act* must comply with certain emissions values in *TA Laerm* unless exempted (BImSchG, Section 66; TA Laerm 1., 2.321).	Determine if the installation has facillities of the types listed in Table 1-1 (*Air Emission Management*). (1) Verify that the identified facilities have a permit. Verify that the facility meets the parameters of the permit. Verify that the noise levels in Table 5-1 are not exceeded, unless the facility has been exempted from compliance.
...	...
5-5. Outdoor sports facilities are to be constructed and operated in such a way that certain noise immission levels are not exceeded (18. BImSchV, Section 2).	Verify that the noise levels in Table 5-2 are not exceeded by outdoor sports facilities in the given areas at the given times. (1)
...	...
5-6. Sports facilities may not cause noise levels in the rooms of adjoining buildings that are not part of the sports facilities that exceed certain limits (18. BImSchV, Section 2(3)).	Verify that noise levels do not exceed 35 dB(A) during the day or 25 dB(A) at night in the rooms of buildings that adjoin but are not part of sports facilities. (1) (NOTE: Individual, brief noise level peaks may not exceed the above values by more than 10 dB(A).)
...	...
5-7. The noise control districts established around military airports that service aircraft with jet engines must be redefined if the noise load at the perimeter of the district rises by more than 4 dB(A) (Gesetz zum Schutz gegen Fluglaerm, Section 4(2)).	Determine if the noise load at the perimeter of the installation's noise control district has risen by more than 4 dB(A). (1)(2) Verify that the noise control district has been redefined.
...	...

(1) BCE (Base Civil Engineering (Environmental/Community Planning)) (2) Deputy for Operations (Air Space Manager) (3) Public Affairs Office (4) Range Operating Agency

COMPLIANCE CATEGORY: ENVIRONMENTAL NOISE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-8. Noise control districts must be reviewed periodically. (Gesetz zum Schutz gegen Fluglaerm, Section 4).	Verify that a review of the noise control district takes place no later than 10 years (yr) after the district was established to determine whether the noise load has increased by more than 4 dB(A) and whether it can be expected to increase within the coming 10 yr. (1) Verify that such reviews are repeated at 10 yr intervals unless special circumstances make earlier reviews necessary.
...	...
5-9. A permit under state law is required to build hospitals, rest homes, convalescent homes, schools and like buildings within noise control districts (Gesetz zum Schutz gegen Fluglaerm, Section 5).	Verify that permits are held for any such buildings within the confines of the noise control district established for the installation. (1)
...	...
5-10. No residential construction may take place in noise control districts except under certain conditions (Gesetz zum Schutz gegen Fluglaerm, Section 5(2) and (3)).	Verify that no contruction of residential buildings has taken place within the noise control zone for persons other than troop (1) (NOTE: This item does not apply to dwellings and quarters for troops stationed in the Federal Republic of Germany on the basis of international treaties.)
...	...
5-11. During the operation of aircraft in the air or on the ground, all avoidable noise is to be prevented and the spread of noise that cannot be prevented is to be kept to a minimum, particularly during the night-time quiet period (LuftVG, Section 29b).	Verify that avoidable noise is being prevented and that the spread of unavoidable noise is being kept to a minimum. (1)(2)
...	...
5-12. The noise that is caused as a consequence of the operation of an aircraft may not be louder than is necessary for the proper operation or control of it (LuftVO, Section 1(2)).	Verify that no more noise than necessary is being generated during the operation of aircraft. (1)(2)

(1) BCE (Base Civil Engineering (Environmental/Community Planning)) (2) Deputy for Operations (Air Space Manager) (3) Public Affairs Office (4) Range Operating Agency

COMPLIANCE CATEGORY: ENVIRONMENTAL NOISE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-13. The noise emissions limits for propeller-driven aircraft and power gliders with a maximum weight of 600 kg is not to exceed 68 dB(A) (Laermgrenzwerte fuer Propellerflugzeuge..., Section 3.1).	Verify that the above noise emission limit is not exceeded by propeller-driven aircraft or power gliders. (1)(2)
...	...
5-14. The noise emissions limits for propeller-driven aircraft and power gliders with a maximum weight of more than 600 kg go up by 4 dB(A) for every 300 kg of additional maximum weight until the noise emission limit reaches 80 dB(A) (Laermgrenzwerte fuer Propellerflugzeuge..., Section 3.2).	Verify that the appropriate noise emission limit is not exceeded by any given propeller-driven aircraft or power glider the maximum weight of which falls between 600 kg and 1500 kg. (1)(2)
...	...
5-15. The noise emissions limits for propeller-driven aircraft and power gliders with a maximum weight over 1500 kg go up by 1.5 dB(A) for every kilogram of maximum weight up to 5700 kg (Laermgrenzwerte fuer Propellerflugzeuge..., Section 3.3.3.1).	Verify that the appropriate noise emission limit is not exceeded by any given propeller-driven aircraft or power glider the maximum weight of which falls between 1500 kg and 5700 kg. (1)(2)
...	...

(1) BCE (Base Civil Engineering (Environmental/Community Planning)) (2) Deputy for Operations (Air Space Manager) (3) Public Affairs Office (4) Range Operating Agency

COMPLIANCE CATEGORY: ENVIRONMENTAL NOISE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-16. Noncommercial, civil flights in light planes and power gliders are restricted to certain times at certain landing fields (Verordnung ueber die zeitliche Einschraenkung des Flugbetriebs..., Section 1).	Determine if the installation's landing fields are subject to this regulation. (1)(2) (NOTE: The Federal Minister for Traffic *(Bundesminister fuer Verkehr)* publishes a list of landing fields that are subject to this regulation in the *Bundesanzeiger* and in the *Nachrichten fuer Luftfahrer* (News for Aviators). In the absence of those publications, whether the restrictions apply or not can be determined on the basis of the number of take-offs and landings that occurred during the previous calendar year. If 20,000 or more take-offs and landings occurred, then the restrictions apply.) Verify that the following sorts of flights do not occur on weekdays before 0700 h, between 1300 and 1500 h, or after sunset, or on Sundays and holidays before 0900 h and after 1300 h. - circling the airport - training flights - sight-seeing flights for which fees are charged - advertising flights that require a permit - towed take-offs. (NOTE: Cross-country training flights that take place outside the environs of the landing field and last longer than 1 h are not subject to these restrictions, nor are take-offs for ferrying flights and high performance flights, for competitions, attempts at setting records, nor flights that are necessary to obtain badges of performance.) (NOTE: Light planes and power gliders that meet raised noise control standards are not subject to these restrictions. Light planes and power gliders are considered to meet raised standards for noise protection if they exceed by at least 8 dB(A) the limits on emissions laid down in the announcement of the Federal Office of Civil Aeronautics on 17 July 1975 which was published in *Bundesanzeiger* No. 26 of 7 February 1976 and in the *Nachrichten fuer Luftfahrer* NfL II -- 47/75. The Federal Office of Civil Aeronautics determines which light planes and power gliders meet these standards and publishes a list of the models that do in the *Bundesanzeiger* and in the *Nachrichten fuer Luftfahrer*.)
...	...
5-17. The production of unnecessary noise in the course of operating a motor vehicle is prohibited (StVO, Section 30(1)).	Verify that the drivers of motor vehicles are avoiding the production of unnecessary noise in the course of operating their vehicles by: (1) - not leaving the vehicle's motor idling unnecessarily - by not closing the vehicle's doors inordinately loudly - by not driving around unnecessarily in built-up areas if others are annoyed by it.
...	...

(1) BCE (Base Civil Engineering (Environmental/Community Planning)) (2) Deputy for Operations (Air Space Manager) (3) Public Affairs Office (4) Range Operating Agency

COMPLIANCE CATEGORY: ENVIRONMENTAL NOISE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-18. The times at which trucks with an allowable total weight of over 7.5 tons and trailers attached to trucks may be used are restricted (StVO, Section 30(3)).	Verify that trucks with an allowable total weight of over 7.5 tons and trailers attached to trucks are not used on Sundays and holidays between 0001 h and 2200 h. (1)
...	...
5-19. The noise emitted by construction cranes during operation may not exceed 75 dB(A) (2. BImSchVwV, 2.2, 2.3).	Verify that the installation's construction cranes do not emit noise at a level of more than 75 dB(A) during operation. (1) (NOTE: That figure may be exceeded by up to 3 dB(A), if the crane has been in operation for more than 2 yr.)
...	...

5-20. The noise that may be emitted by hand-held pneumatic hammers (pneumatic picks, jack hammers (*Aufbruchhaemmer*), pneumatic spades) is limited according to weight class (3. BImSchVwV, 2.1).	Verify that the installation's hand-held pneumatic hammers comply with the following noise emission limits: (1)
	
	- Weight Class
	  - up to 20 kg - 79 dB(A)
	  - over 20 to up to 35 kg - 82 dB(A)
	  - over 35 kg - 87 dB(A).
	
	(NOTE: The above figures may be exceeded by up to 3 dB(A) by hammers that have been in use for longer than 2 yr.)

...	...

5-21. The noise production of lawnmowers is regulated depending upon the size of the swath that they cut (8. BImSchV, Section 1).	Verify that the following noise emission limits are being complied with: (1)
	
	- Width of Swath
	  - up to 50 centimeter (cm) - 96 dB(A)
	  - over 50 cm to 120 cm - 100 dB(A)
	  - over 120 cm - 105 dB(A).

...	...

(1) BCE (Base Civil Engineering (Environmental/Community Planning)) (2) Deputy for Operations (Air Space Manager) (3) Public Affairs Office (4) Range Operating Agency

COMPLIANCE CATEGORY: ENVIRONMENTAL NOISE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-22. The times at which lawnmowers other than those used in agriculture or silviculture may be operated are restricted (8. BImSchV, Section 6).	Verify that no lawnmowers are used on workdays between 1900 h and 0700 h, and that no lawnmowers at all are used on Sundays and holidays. (1) (NOTE: Lawnmowers that have labels indicating that they produce less than 88 dB(A) may be used on workdays between 1900 and 2200 h, as may those that were first marketed before 1 August 1987 and are labelled as having an emission figure of less than 60 dB(A).)
...	...
RHEINLAND-PFALZ NOISE CONTROL	
5-23. It is prohibited to operate facilities of any type in such a way as to disturb persons during specific time periods (Laermschutzverordnung, Section 2).	Verify that no one is being disturbed between 2200 h and 0700 h. (1)(3) Verify that no one in a residential area is being disturbed between 1300 and 1500 h. (NOTE: These restrictions do not apply to labor conducted in commercial or industrial enterprises within areas zoned exclusively or primarily for enterprises of that type.)
...	...
5-24. When using or operating land or water vehicles of all sorts, people in residential areas and in other areas where noise control is necessary must refrain from making all noise that can be avoided. (Laermschutzverordnung, Section 3).	Verify that the following activities do not take place: (1) - idling motors unnecessarily or unnecessarily loudly - driving motor vehicles in low gear ranges at high RPMs - closing motor vehicle or garage doors unnecessarily loudly - starting motorcycles or motor-assisted bicycles in gateways, passageways, or in the inner courts of residential dwellings or apartment buildings - exceeding the noise limits in Table 5-3 while loading or unloading a motor vehicle.
...	...
5-25. Motor-driven lawnmowers, particularly those with internal combustion engines, and other motorized lawn-and-garden equipment may be used during certain times only (Laermschutzverordnung, Section 4(1)).	Verify that lawnmowers (other than electric ones with low noise emission levels) and other motor-driven lawn-and-garden machines and equipment are used on workdays between 0700 and 1300 h and between 1500 and 1900 h only. (1) (NOTE: These restrictions apply to agricultural, silvicultural, and horticultural enterprises between 2200 and 0600 h only.)
...	...

(1) BCE (Base Civil Engineering (Environmental/Community Planning)) (2) Deputy for Operations (Air Space Manager) (3) Public Affairs Office (4) Range Operating Agency

COMPLIANCE CATEGORY: ENVIRONMENTAL NOISE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-26. The area within a 50 meter (m) radius of churches, hospitals, nursing homes, children's homes, and similar facilities is subject to further protection (Laermschutzverordnung, Section 4(4)).	Verify that only those lawnmowers, tools, and machines with low noise immission levels are used within a 50 m radius of such facilities. (1)
...	...
5-27. The use of sound reproduction equipment (radios, televisions, jukeboxes, etc.) and the playing of musical instruments are also subject to restriction (Laermschutzverordnung, Section 5).	Verify that no sound reproduction equipment is used and no musical instrument is played at a volume that disturbs uninvolved parties more than is unavoidable under the circumstances. (1)(3) Verify that no sound reproduction equipment or musical instrument is being used from 1300 to 1500 h and from 2000 to 0700 h unless it has been determined that uninvolved parties are not being disturbed.
...	...
5-28. The use of sound reproduction equipment and musical instruments in public situations is also restricted (Laermschutzverordnung, Section 5(2)).	Verify that sound reproduction equipment and musical instruments are being used in public traffic areas in closed motor vehicles only. (1)(3) Verify that such equipment is not used in, at, or on public facilities such as sports facilities, playgrounds, swimming pools, and beaches that are used by the public. Verify that such equipment is not being used in, at, or on facilities, conveyances, or spaces used by the public.
...	...
5-29. The use of class II pyrotechnical devices that cause bangs or screaching sounds is restricted (Laermschutzverordnung, Section 6(1)).	Verify that no such devices are used within a radius of 50 m of churches, hospitals, nursing homes, children's homes, or similar facilities. (1)
...	...
5-30. Fireworks displays must be limited in length (Laermschutzverordnung, Section 6(2).	Verify that fireworks displays last no longer than one half hour and that they are finished by no later than 2200 h. (1)(3) (NOTE: In the months May through September they may run until 2230 h.)
...	...

(1) BCE (Base Civil Engineering (Environmental/Community Planning)) (2) Deputy for Operations (Air Space Manager) (3) Public Affairs Office (4) Range Operating Agency

COMPLIANCE CATEGORY: ENVIRONMENTAL NOISE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-31. The non-commercial use of saluting guns is prohibited (Laermschutzverordnung, Section 6(3)).	Verify that no saluting guns are used. (1)(4)
...	...
5-32. Work signals are subject to restriction (Laermschutzverordnung, Section 7).	Verify that work signals are not audible to such a degree as to cause disturbances outside the work area. (1)
...	...
5-33. Noise produced by kept animals is also restricted (Laermschutzverordnung, Section 9).	Verify that no one is disturbed by the noise that animals produce to such an extent that there is reason to be concerned that health might be endangered. (1)(3)

(1) BCE (Base Civil Engineering (Environmental/Community Planning)) (2) Deputy for Operations (Air Space Manager) (3) Public Affairs Office (4) Range Operating Agency

Table 5-1

Noise Level Limits For Facilities Listed in Table 1-1 (Chapter 1 of this manual) That Do Not Have Exemptions

The following noise level limits apply in the following areas:

For areas in which are found only commercial or industrial facilities and dwellings in which the proprietors and managers of the facilities and supervisory and emergency personnel are quartered:

At any time	70 dB(A)

For areas in which commercial facilities predominate:

During the day	65 dB(A)
At night	50 dB(A)

For areas with both commercial and residential buildings in which neither predominates:

During the day	60 dB(A)
At night	50 dB(A)

For areas with both commercial and residential buildings in which residential buildings predominate:

During the day	55 dB(A)
At night	40 dB(A)

For areas in which only residential buildings are found:

During the day	50 dB(A)
At night	35 dB(A)

For areas in which sanatoria, hospitals, and/or homes (i.e., for children, the elderly, etc.) are located:

During the day	45 dB(A)
At night	35 dB(A)

For dwellings that are structurally connected to a facility:

During the day	40 dB(A)
At night	30 dB(A)

Table 5-2

Noise Emission Limits for Sports Facilities

1. In areas zoned for economic activity:	
outside of daytime rest periods	65 dB(A)
during daytime rest periods	60 dB(A)
at night	50 dB(A)
2. In central areas, village areas, and mixed areas:	
outside of daytime rest periods	60 dB(A)
during daytime rest periods	55 dB(A)
at night	45 dB(A)
3. In general residential areas and small housing estates:	
outside of daytime rest periods	55 dB(A)
during daytime rest periods	50 dB(A)
at night	40 dB(A)
4. In exclusively residential areas:	
outside of daytime rest periods	50 dB(A)
during daytime rest periods	45 dB(A)
at night	35 dB(A)
5. In areas where there are san atoria, hospitals, and nursing homes:	
outside of daytime rest periods	45 dB(A)
during daytime rest periods	45 dB(A)

Table 5-3

Limits on Noise Emissions Generated While Loading or Unloading Motor Vehicles (Rheinland-Pfalz)

In areas in which are found only commercial or industrial facilities and dwellings in which the proprietors and managers of the facilities and supervisory and emergency personnel are quartered:

At any time	70 dB(A)

In areas in which commercial facilities predominate:

During the day	65 dB(A)
At night	50 dB(A)

In areas with both commercial and residential buildings in which neither predominates:

During the day	60 dB(A)
At night	50 dB(A)

In areas with both commercial and residential buildings in which residential buildings predominate:

During the day	55 dB(A)
At night	40 dB(A)

In areas in which only residential buildings are found:

During the day	50 dB(A)
At night	35 dB(A)

In areas in which sanatoria, hospitals, and/or homes (i.e. for children, the elderly, etc.) are located:

During the day	45 dB(A)
At night	35 dB(A)

In dwellings that are structurally connected to a facility:

During the day	40 dB(A)
At night	30 dB(A)

(NOTE None of the above restrictions apply if the affected parties have consented to the annoyance caused by the noise.)

INSTALLATION:	COMPLIANCE CATEGORY: ENVIRONMENTAL NOISE MANAGEMENT German	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) BCE (Base Civil Engineering (Environmental/Community Planning)) (2) Deputy for Operations (Air Space Manager) (3) Public Affairs Office (4) Range Operating Agency

Section 6

Pesticide Management

Section 6

PESTICIDE MANAGEMENT

A. Applicability

All installations need to be aware of regulatory requirements concerning the use of pesticides. For this reason, at least some of the requirements in this section can be expected to apply to all installations.

B. National Laws and Regulations

- The **Gesetz zum Schutz der Kulturpflanzen (Pflanzenschutzgesetz -- PflSchG)** (Act for the Protection of Cultivated Plants (*Plant Protection Act*)) lays out the general principles which govern the use of pesticides and other plant protectants in the Federal Republic of Germany. It contains some provisions restricting the use of plant protectants and others relevant to persons who apply them on behalf of third parties.

- The **Pflanzenschutz-Sachkundeverordnung** (Plant Protection Expertise Regulation) lays out the requirements that must be met by persons who apply pesticides on behalf of others.

- The **Verordnung ueber Anwendungsverbote und -Beschraenkungen fuer Pflanzenbehandlungsmittel (Pflanzenschutz-Anwendungsverordnung)** (Regulation concerning Prohibitions and Restrictions on Use of Plant Treatment Agents (Plant Protectant Use Regulation)) prohibits the use of certain chemicals and restricts the use of others to varying degrees.

- The **Gesetz ueber den Verkehr mit DDT (DDT-Gesetz)** (*Act on Traffic in DDT*) prohibits the production, import, export, marketing, purchase, or application of DDT and products that contain DDT as an active ingredient.

- The **Verordnung ueber die Anwendung bienengefaehrlicher Pflanzenschutzmittel (Bienenschutzverordnung)** (Regulation on the Application of Plant Protectants that are Hazardous to Bees (Bee Protection Regulation)) regulates the application of plant protectants that the Biologische Bundesanstalt fuer Land- and Forstwirtschaft [Federal Biological Institute for Land and Forest Management] has required to be labelled "Bienengefaehrlich" [Hazardous to Bees].

C. State Laws and Regulations -- Rheinland-Pfalz

No state laws relevant to the application of pesticides have yet been found.

D. Key Compliance Definitions

- *Harmful Organism* - plants, animals, and microorganisms in all stages of development that can cause considerable damage to plants or plant products (PflSchG, Section 2(1)(7)).

  (NOTE: Viruses and similar pathogens are considered microorganisms, and diseases that are not caused by harmful organisms are considered harmful organisms. Further, the muskrat (Ondatra zibethicus L.) is considered a harmful organism.)

- *Integrated Plant Protection* - a combination of processes that limits the use of chemical plant protectants as much as possible, giving preferential consideration to biological, biotechnical, and agricultural/horticultural measures (PflSchG, Section 2(1)(2)).

- *Plant Products* - products of botanical origin that are not processed or are treated only by means of such simple processes as drying or cutting. Also included are parts of plants (including fruits and seeds) that are not destined for cultivation (PflSchG, Section 2(1)(4)).

  (NOTE: Treated wood is not considered a plant product.)

- *Plant Protectants* - substances that are intended to
  - protect plants from harmful organisms or non-parasitic impairment
  - protect plant products from harmful organisms
  - protect plants or plant products from animals, plants, or
  - microorganisms that are not harmful organisms
  - have an effect the life processes of plants apart from the feeding of of them (growth regulators)
  - inhibit the germination of plant products,
  - be added to the above substances with a view to changing their properties or effects

  (PflSchG, Section 2(1)(9)).

  (NOTE: Substances that are intended to be used to kill plants or to clear areas of plant growth or keep them free of it, even if such substances do not fall into the above categories, are considered plant protectants. However, water, fertilizers, and plant roborants are not are not considered plant protectants (PflSchG, Section 2(1)(9)).)

- *Plant Protectants that are Hazardous to Bees* - plant protectants that the Biologische Bundesanstalt fuer Land- and Forstwirtschaft [Federal Biological Institute for Land and Forest Management] has required to be labelled "Bienengefaehrlich" [Hazardous to Bees], as well as other plant protectants that are used in quantities or concentrations greater than those provided for in the instructions (Bienenschutzverordnung, Section 1(1)).

- *Plant Roborants* - substances that are exclusively intended to enhance the ability of plants to withstand harmful organisms. Plant roborants may not have any adverse effects on the health of humans or animals nor on the natural environment (PflSchG, Section 2(1)(10)).

- *Plants* - living plants, plant parts (including fruits and seeds) that are to be cultivated (PflSchG, Section 2(1)(3)).

- *Plants in Bloom* - Plants, other than hops and potatoes, on which open blossoms are to be found (Bienenschutzverordnung, Section 1(2)).

PESTICIDE MANAGEMENT

GUIDANCE FOR CHECKLIST USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PEOPLE OR GROUPS:(*)
All Installations	6-1 and 6-2	(1)(2)
Plant Protectant Use	6-3 through 6-7	(1)(2)(4)(5)
Application Of Plant Protectants	6-8 and 6-9	(1)(2)(4)(5)
Plant Treatment Agents	6-10 through 6-14	(4)(5)
DDT	6-15	(4)(5)

(*)CONTACT/LOCATION CODE:

(1) BCE (Base Civil Engineering)
(2) BEE (Bioenvironmental Engineering)
(4) Pest Management Shop
(5) Golf Course Maintenance

PESTICIDE MANAGEMENT

Records to Review

- Records of pesticides purchased by the facility (purchase orders, inventory)
- Pesticide application records
- Description of the facility's pest control program
- Certificates of applicators of restricted-use pesticides
- Facility applicator certification and training program, including documentation of Federal approval program
- Pesticide disposal manifests
- Any emergency exemption granted to the Federal agency by the U.S. Environmental Protection Agency (USEPA)

Physical Features to Inspect

- Pesticide application equipment
- Pesticide storage areas, including storage containers
- Golf course maintenance areas

Sources to Interview

- BCE (Base Civil Engineering)
- BEE (Bioenvironmental Engineering)
- Pest Management Shop
- Golf Course Maintenance

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL INSTALLATIONS	
6-1. Determine actions or changes since previous review of pesticide management (GMP).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report. (1)
...	...
6-2. Installations should maintain a file of German laws and regulations pertaining to pesticides management (GMP).	Verify that copies of the following federal laws and regulations are kept at the installation: (1)(2) - *Gesetz zum Schutz der Kulturpflanzen (Pflanzenschutzgesetz -- PflSchG)* - *Pflanzenschutz-Sachkundeverordnung* - *Verordnung ueber Anwendungsverbote und -Beschraenkungen fuer Pflanzenbehandlungsmittel (Pflanzenschutz-Anwendungsverordnung)* - *Gesetz ueber den Verkehr mit DDT (DDT-Gesetz)* - *Verordnung ueber die Anwendung bienengefaehrlicher Pflanzenschutzmittel (Bienenschutzverordnung).*
...	...
PLANT PROTECTANT USE	
6-3. Plant protectants may be used only in accordance with good technical practices (PflSchG, Section 6(1)).	Verify that plant protectants are used only in accordance with good technical practices. (1)(4)(5) (NOTE: Good technical practice is understood to include consideration of the basic prinicples of integrated plant protection.)
...	...
6-4. Plant protectants may not be used if applying them will have a negative impact on the health of humans or animals, or on groundwater, or if they will have significant negative impact on the environment in general (PflSchG, Section 6(1)).	Verify that plant protectants are not used if applying them will have a negative impact on the health of humans or animals, or on groundwater, or if they will have significant negative impact on the environment in general. (1)(2)(4)(5)
...	...

(1) BCE (Base Civil Engineering) (2) BEE (Bioenvironmental Engineering) (4) Pest Management Shop (5) Golf Course Maintenance

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
6-5. If the directions for use include instructions from the Federal Biologial Institute for Agriculture and Silviculture [Biologische Bundesanstalt fuer Land- und Forstwirstschaft], the plant protectant may be used only in accordance with those instructions (PflSchG, Section 6(1)).	Verify, if the directions for use include instructions from the Federal Biologial Institute for Agriculture and Silviculture [Biologische Bundesanstalt fuer Land- und Forstwirstschaft], that the plant protectant is used only in accordance with those instructions. (1)(2)(4)(5)
...	...
6-6. Plant protectants may be used on open land only if that land is being used for agricultural, silvicultural, or horticultural purposes (PflSchG, Section 6(2)).	Verify that no plant protectants are used on open land unless that land is being used for agricultural, silvicultural, or horticultural purposes. (4)(5)
...	...
6-7. Plant protectants may not be used in or immediately alongside surfaces waters or coastal waters (PflSchG, Section 6(2)).	Verify that no plant protectants are being used in or immediately alongside surface waters or coastal waters. (4)(5) (NOTE: Variances may be sought from the competent authority.)
...	...
APPLICATION OF PLANT PROTECTANTS	
6-8. Persons who apply plant protectants on behalf of others must be properly certified (Pflanzenschutz-Sachkundeverordnung, Section 1).	Verify, if contractors apply pesticides for the installation, that those contractors are properly certified. (1)(2)(4)(5)
...	...

(1) BCE (Base Civil Engineering) (2) BEE (Bioenvironmental Engineering) (4) Pest Management Shop (5) Golf Course Maintenance

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
6-9. Persons who apply plant protectants on behalf of others must inform the competent authority that they are doing so before beginning to apply them (PflSchG, Section 9).	Verify, if contractors apply plant protectants on behalf of the installation, that the contractors have informed the competent authority before starting work. (1)(2)(4)(5)
...	...
PLANT TREATMENT AGENTS	
6-10. Plant treatment agents that consist of or contain certain chemicals may not be used (Pflanzenschutz-Anwendungsverordnung, Section 1).	Verify that the plant treatment agents that consist of or contain the chemicals listed in Table 6-1 are not used on the installation. (4)(5) (NOTE: Exemptions from the prohibition may be granted by the Biologische Bundesanstalt fuer Land- und Forstwirstschaft [Federal Biologial Institute for Agriculture and Silviculture].)
...	...
6-11. Plant treatment agents that consist of or contain certain specific chemicals may be used in certain contexts only (Pflanzenschutz-Anwendungsverordnung, Section 2).	Verify that plant treatment agents that consist of or contain the chemicals listed in Table 6-2 are used only in the contexts specified in that Table. (4)(5) (NOTE: Exemptions from the restrictions on use may be granted by the Biologische Bundesanstalt fuer Land- und Forstwirstschaft [Federal Biologial Institute for Agriculture and Silviculture].)
...	...
6-12. Plant treatment agents that consist of or contain certain chemicals may not be used if a prohibition on their use is in force (Pflanzenschutz-Anwendungsverordnung, Section 3(1)).	Verify that plant treatment agents that consist of or contain the chemicals listed in Chart One of Table 6-3 are not used contrary to the accompanying prohibition. (4)(5) (NOTE: Exemptions from the prohibition may be granted by the Biologische Bundesanstalt fuer Land- und Forstwirstschaft [Federal Biologial Institute for Agriculture and Silviculture].)
...	...

(1) BCE (Base Civil Engineering) (2) BEE (Bioenvironmental Engineering) (4) Pest Management Shop (5) Golf Course Maintenance

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
6-13. Certain plant treatment agents may not be used in water protection areas and medicinal spring protection areas (Pflanzenschutz-Anwendungsverordnung, Section 3(2)).	Determine whether the installation is located within the bounds of a water protection area or a medicinal spring protection area. (4)(5) (NOTE: See the *Water Quality Management* protocol.) Verify that the chemicals listed in Chart Two of Table 6-3 are not used on the installation unless the Table qualifies the prohibition. (NOTE: This entry does not apply to the use of these agents in commercial products for application to potted plants.)
...	...
6-14. The application of plant protectants that are hazardous to bees must be carried out according to specific criteria (Bienenschutzverordnung, Section 2).	Determine whether the plant protectants in use on the installation are hazardous to bees. (4)(5) Verify that no plant protectants that are hazardous to bees are applied to flowers in bloom or to other plants that bees are attracted to. Verify that plant protectants that are hazardous to bees are not applied in such a way that flowers in bloom or other plants that bees are attracted to are effected secondarily. Verify that permission of the beekeeper is sought before plant protectants that are hazardous to bees are applied within a radius of 60 meters (m) of a beehive during the time of day that the bees are in flight. Verify that plant protectants that are hazardous to bees are not handled, stored, or disposed of in such a way that bees may come into contact with them. (NOTE: These provisions do not apply to the application, handling, or storage of plant protectants that are hazardous to bees in closed areas to which bees cannot gain access.) (NOTE: The Federal Institute for Land and Forest Management may permit the application of certain plant protectants during certain hours. The plant protectants are so labelled but may be used only during the specified hours.)
...	...
DDT	
6-15. The use of DDT and of products that contain DDT as an active ingredient is prohibited (DDT-Gesetz, Section 1).	Verify that no DDT is in use on the installation. (4)(5)

(1) BCE (Base Civil Engineering) (2) BEE (Bioenvironmental Engineering) (4) Pest Management Shop (5) Golf Course Maintenance

Table 6-1

Pesticides the Use of Which is Prohibited

Number	Substance	Chemical Name
1	Acrylonitrile	Acrylonitrile
2	Aldrin	(1R,4S,4aS,5S,8R,8aR)-1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-dimethanonaphthaline
3	Aramit	O-[2-(4-tert-butyl-phenoxy)-1-methyl-ethyl]-O-(2- chloroethyl) sulfite
4	Arsenic compounds	
5	Atrazin	
6	Binapacryl	
7	Lead compounds	
8	Cadmium compounds	
9	Captafol	
10	Carbaryl	1-naphthylmethylcarbamate
11	Chlordane	1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-4,7-methanoindane
12	Chlordecone (Kepone)	
13	Chlordimeform	
14	Chloroform	Trichloromethane
15	Chlorpikrin	Trichloronitromethane
16	Crimidin	2-chloro-4-dimethylamino-6-methylpyrimidine
17	1,2-Dibromethane	
18	1,2-Dichloroethane	
19	1,3-Dichloropropylene	
20	Dicofol that contains less than 780 g/kg of p.p'-Dicofol or more than 1 g/kg of DDT or DDT compounds	
21	Dieldrin	(1R,4S,4aS,5R,6R,7S,8S,8aR)-1,2,3,4,10,10-hexachloro-1,4,4a,5,6,7,8,8a-octahydro-6,7-epoxy-1,4:5,8-dimethanonaphthaline
22	Dinoseb, its acetates and salts	
23	Endrin	(1R,4S,4aS,5S,6S,7R,8R,8aR)-1,2,3,4,10,10-hexachloro-1,4,4a,5,6,7,8,8a-octahydro-6,7-epoxy-1,4:5,8-dimethanonaphthaline
24	Ethylene oxide	Ethylene oxide
25	Fluoroacetic acid and its derivatives	
26	HCH (commercial)	Mixtures of isomers of hexachlorohexane
27	Heptachlor	1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-4,7-methanoindene

Table 6-1 (continued)

Number	Substance	Chemical Name
28	Hexachlorobenzene	Hexachlorobenzene
29	Isobenzan	1,3,4,5,6,7,8,8-octachloro-1,3,3a,4,7,7a-hexahydro-4,7-methanoisobenzofuran
30	Isodrin	1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-1,4-endo-5,8-endo-dimethanonaphthaline
31	Kelevan	Ethyl-5-(1,2,4,5,6,7,8,8,9,10-decachloro-3-hydroxypentacyclo-(5.3.0.^{2,6}.O^{4,10}.O^{5,9}]dec-3-yl)-4-oxovalerate
32	Maleic hydrazide and its salts other than Cholin-, potassium-, and sodium salts	
33	Maleic hydrazide Cholin-, potassium-, and sodium salts that contain more than 1 mg/kg of free hydrazine, given as the acid equivalent	
34	Morfamquat	
35	Nitrofen	
36	Pentachlorophenol	
37	Polychloroterpene	
38	Mercury compounds	
39	Qunitozen	
40	Selenium compounds	
41	2,4,5,-T	
42	Carbon tetrachloride	Tetrachloromethane

Table 6-2

Limited Application Pesticides

(NOTE: The following pesticides may not be applied in Water Protection Zones, unless the competent authority has granted permission. Relevant restrictions on areas where application is permissible must be observed. These pesticides may not be applied in Nature Protection Areas, National Parks, or Natural Monuments, unless the safety regulations in the documents that establish the areas specify otherwise.)

Number	Chemical Name	Application Permissible
1	Aldicarb	2-methyl-2-(methylthio)-propionaldehyde-O-(methylcarbamoyl)-oxim agricultural contexts
2	Hydrogen cyanide and compounds that generate it	Hydrogen cyanide mills, storage rooms, in transport vehicles and containers;for fumigating dormant plants, in greenhouses
3	Chlorpyralid	For treating creeping thistle outside of water protection areas and medicinal spring protection areas in the course of growing fodder sugar beets
4	Deiquat	for killing weeds among potatoes,for *Abreifebeschleunigung* of colza, bean, and field peas and for killing the leaves of clover and alfalfa for seed production
5	Methyl bromide	For fumigation in mills, storage rooms, in vacuum chambers, air-tight silos, transport vehicles and containers, under air-tight tarps as a measure against pests of stored foods. May also be used for treating the soil outside of water protection areas and medicinal spring protection areas in the course of growing ornamental plants, in tree nurseries, vine nurseries, and in the course of producing seed potatoes
6	Compounds that generate hydrogen phosphides (Zinc phosphides used as an ingredient in rodenticidal baits is excepted)	For fumigation in storage rooms, transport vehicles and and containers, under air-tight tarps as a measure against pests of stored foods. May also be used against the water vole (Arvicola terrestris L.), the hamster (Cricetus cricetus L.), and the mole (Talpa europaea L.) outside of water protection areas and medicinal spring protection areas

Table 6-2 (continued)

Number	Chemical Name	Application Permissible
7	Carbon disulfide	for soil treatment in viticulture
8	Thallium sulfate	In closed spaces
9	Zinc phosphide	In bait; my be used outside of forests only as bait in concealed traps

Table 6-3

Restricted Use Pesticides

Number	Substance	Special Provisions
		Chart One
1	Amitrol	Use from airplanes is prohibited
2	Daminozid	Use in fruit cultivation is prohibited
3	Lindan	Use in mills, siloes, stores of grain and grain products is prohibited
4	Paraquat	Use in the growing of grains is prohibited
5	Parathion	Use of more than 250 g of active ingredient per hectare per growing season is prohibited in the growing of grains
6	Parathion-methyl	Use of more than 250 g of active ingredient per hectare per growing season is prohibited in the growing of grains
7	Quartz Powder	Use in grain stores and in rooms in which grain is stored is prohibited
		Chart Two
1	Alloxydim	
2	Amitrol	
3	Asulam	
4	Benalaxyl	
5	Benazolin	
6	Bendiocarb	
7	Bentazon	
8	Bromacil	
9	Calcium carbide	
10	Carbetamid	
11	Carbofuran	
12	Carbosulfan	
13	Chloramben	
14	Chlorthiamid	
15	Cyanazin	
16	Dazomet	
17	Diazinon	
18	Dicamba	

Table 6-3 (continued)

Number	Substance	Special Provisions
19	Dichlobenil	
20	Dikegulac	
21	Dimefuron	
22	Dimethoat	The restriction does not apply to use in sticks to be inserted in pots in the non-commercial sector
23	Dinoterb	
24	DNOC	
25	Ethidimuron	
26	Ethiofencarb	
27	Ethoprofos	
28	Etrimfos	
29	Flamprop	
30	Fluazifop	
31	Fluroxypyr	
32	Haloxyfop	
33	Hexazinon	
34	Isocarbamid	
35	Karbutilat	
36	Lindan	The restriction does not apply to use against bark beetles in peeled rinds or to use when poured or broadcast
37	Mefluidid	
38	Metalaxyl	
39	Metam-Natrium	
40	Metazachlor	
41	Methamidophos	The restriction does not apply when the agent is poured
42	Methomyl	
43	Methyl isothiocyanate	
44	Metribuzin	
45	Monochlorobenzene	
46	Monolinuron	
47	Sodium chlorate	
48	Nitrothal-isopropyl	
49	Fruit tree carbolineum [*Obstbaumkarbolineum*] (Anthracenoel)	
50	Oxadixyl	
51	Oxamyl	

Table 6-3 (continued)

Number	Substance	Special Provisions
52	Oxycarboxin	
53	Picloram	
54	Propachlor	
55	Propazin	
56	Propoxur	
57	Prothoat	
58	Pyridat	
59	S 421 (Synergist)	
60	Sethoxydim	
61	Simazin	
62	TCA	
63	Tebuthiuron	
64	Terbacil	
65	Terbumeton	
66	Thiazafluron	
67	Thiofanox	
68	Triclopyr	

INSTALLATION:	COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT German	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) BCE (Base Civil Engineering) (2) BEE (Bioenvironmental Engineering) (4) Pest Management Shop (5) Golf Course Maintenance

Section 7

Petroleum, Oil, and Lubricants (POL) Management

Section 7

POL MANAGEMENT

A. Applicability

Since all Air Force installations are likely to use petroleums, oils, lubricants, or all three types of materials, this section of the manual can be expected to apply to all installations.

B. National Laws and Regulations

German law does not appear to regulate petroleums, oils, and lubricants separately from a class of substances that it characterizes as "harmful to water." For this reason, neither the introductory matter that follows here nor the POL protocol itself will make frequent, specific reference to POLs. They are to be understood to be included in the concept "substance harmful to water." Such substances are defined both conceptually and by listing them in various Federal laws and regulations or in publications dependent on them.

- The **Gesetz zur Ordnung des Wasserhaushalts (Wasserhaushaltsgesetz -- WHG)** (Act on the Management of Water Resources (*Water Resources Act*)) is the principal piece of enabling legislation that deals with the class of substances designated "harmful to water." Actual compliance issues raised by the *Water Resources Act* are relatively few, since it delegates much regulatory authority to the states.

- The **Katalog wassergefaehrdender Stoffe** (Catalogue of Substances Harmful to Water) is a list of substances that have been defined as harmful to water. Such substances are divided into four classes (each of which is called a WGK), namely: substances that are extremely harmful to water (WGK 3), substances that are harmful to water (WGK 2), substances that are moderately harmful to water (WGK 1), and substances that are generally considered not to be harmful to water (WGK 0). The substances listed in the Catalogue and the class to which each belongs are ennumerated in Table 7-1.

- The **Verordnung ueber wassergefaehrdende Stoffe bei der Befoerderung in Rohrleitungsanlagen** (Regulation on Substances Harmful to Water when Transported in Pipelines) specifies a number of substances or groups of substances that are defined as harmful to water.

- The **Verordnung ueber Anlagen zur Lagerung, Abfuellung und Befoerderung brennbarer Fluessigkeiten zu Lande (Verordnung ueber brennbare Fluessigkeiten -- VbF)** (Regulation on Facilities for the Storage, Filling, and Transfer of Combustible Liquids on Land) regulates many aspects of POL storage and handling.

- The **Zwanzigste Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung zur Begrenzung der Kohlenwasserstoffemissionen beim Umfuellen und Lagern von Ottokraftstoffen -- 20. BImSchV)** (20th Regulation Implementing the *Federal Immission Control Act* (Regulation on Limiting Hydrocarbon Emissions in the Course of Transferring and Storing Gasoline)) regulates aspects of emission control in the area of gasoline storage and transfer in facilities that do not require a permit under the terms of the *Federal Immission Control Act.*

- The **Einundzwanzigste Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung zur Begrenzung der Kohlenwasserstoffemissionen bei der Betankung von Kraftfahrzeugen -- 21. BImSchV)** (21st Regulation Implementing the *Federal Immission Control Act* (Regulation on Limiting Hydrocarbon Emissions in the Course of Filling Motor Vehicles with Gasoline)) mandates the use of gas recycling systems in gas stations where the tanks of automobiles are filled with gasoline, if those gas stations do not require a permit under the terms of the *Federal Immission Control Act.*

C. State Laws and Regulations -- Rheinland-Pfalz

- The **Wassergesetz fuer das Land Rheinland-Pfalz (Landeswassergesetz)** (Water Act for the State of Rheinland-Pfalz (*State Water Act*)) contains a number of provisions applicable to substances harmful to water.

- The **Landesverordnung ueber Anlagen zum Abfuellen und Umschlagen wassergefaehrdender Stoffe (Anlagenverordnung)** (State Regulation on Facilities for the Filling and Transfer of Substances Harmful to Water (Facilities Regulation)) contains requirements relevant to the storage, filling, and transfer of substances harmful to water.

- The **Landesbauordnung Rheinland-Pfalz** (State Construction Regulation for Rheinland-Pfalz) mandates that spilled fuel and lubricants must be disposed of in a way that does not harm the environment.

D. Key Compliance Definitions

- *Aboveground Pipeline* - any pipeline that is not an underground pipeline (Anlagenverordnung, Section 2(3)).

- *Aboveground Storage Tank (AST)* - any tank that is not an underground storage tank (UST) (Anlagenverordnung, Section 2(2)).

- *Dangerous-Materials Class A*: liquids that have a flashpoint no greater than 100 degrees Celsius (^{o}C), and that belong to one of the following subgroups:
  - *Dangerous-Materials Class AI*: liquids that have a flashpoint lower than 21 ^{o}C; gasoline is included in this class.
  - *Dangerous-Materials Class AII*: liquids that have a flashpoint from 21 ^{o}C to 55 ^{o}C; kerosine is included in this class.
  - *Dangerous-Materials Class AIII*: liquids that have a flashpoint from 55 ^{o}C to 100 ^{o}C; diesel fuel and fuel oil are members of this class (VbF, Section 3(1)).

- *Diesel Fuel* - See Dangerous-Materials Class AIII.

- *Fuel Oil* - See Dangerous-Materials Class AIII.

- *Gasoline* - See Dangerous-Materials Class AI.

- *Kerosine* - See Dangerous-Materials Class AII.

- *Protection Areas* - these include:
  - water protection areas established by the state under the *Federal Water Resources Act* with a view to protecting existing or future public water supply systems from negative impacts
  - water protection areas established by the state under the *Federal Water Resources Act* with a view to augmenting groundwater
  - medicinal spring protection areas established by Rheinland-Pfalz with a view toward protecting medicinal springs that have been officially recognized by the state
  - areas for which official prohibitions on changes have been established by the Federal government as a means of securing plans to obtain water
  - areas for which the process of officially designating them a water protection area or medicinal spring protection area have already begun, if fewer than 4 years (yr) have elapsed since the start of the process

(Anlagenverordnung, Section 15(4)).

(NOTE: Protection areas may be divided into zones where activities are more highly restricted and those where activities are less highly restricted. If a protection area has a zone where activities are less highly restricted, and if that zone is in its turn divided into areas where restrictions of varying stringency are imposed, only the innermost of those zones counts as a protection area.)

• *Simple or Traditional Facilities* - this includes the following:

- Aboveground storage tanks for liquids that have a total capacity of more than 300 liters (L) in buildings or more than 1000 L outdoors, and facilities with underground storage tanks for liquids, are considered to be of a simple or traditional kind if the following conditions are met:
  - the tanks are double-walled, or if single-walled tanks have impermeable containment
  - leaks in the walls of the tanks are automatically indicated by a leak detection device (NOTE: Aboveground tanks that have containment do not need leak detection equipment.)
  - containment areas are of sufficient size to contain the entire contents of the tank (NOTE: If a containment area has a number of tanks, it must be of sufficient size to contain the entire contents of the largest tank. The containment areas for aboveground storage tanks only may have discharge pipes; they must have shut-off valves and be secured against unauthorized opening.)
  - the individual parts of the facility (especially design and materials) are covered by technical provisions, rules, and design regulations, and meet those requirements; individual parts of the safety devices have design approval under water law or trade law, or an examination certificate under building law
- Pipelines are considered to be of a simple or traditional kind if:
  - they are double-walled, with leaks in the pipe walls indicated automatically by a leak detection device that has design approval under water law or trade law, or an examination certificate under building law
  - they are suction pipes with automatic shut-off valve
  - they are of metal that is so resistant to corrosion that there is no need to worry about leaks; underground steel pipes must be cathodically protected against exterior corrosion if no proof can be presented that they will not corrode
  - they are provided with an impermeable protective pipe or are laid in an impermeable conduit so that leaking liquid is visible in monitoring window (NOTE: Pipes of this sort may not be used to carry flammable liquids with a flashpoint under 55 ^{o}C.)

(Anlagenverordnung, Section 13)

- Storage facilities for liquids that can be pumped only after being heated are considered to be of a simple or traditional kind.
- Indoor facilities with a capacity of less than 300 Land outdoor facilities with a capacity of less than 1000 L are considered to be of a simple or traditional kind if they are covered by technical provisions, rules, and design regulations, and meet those requirements

- Facilities for the storage of solid substances are considered to be of a simple or traditional kind if the facilities have bottom surfaces that are impermeable and resistant to the materials stored in the facility under all operating and weather conditions, and if
  - the materials are always stored in tightly closed containers or packages that are protected from inadvertant damage, from the effects of the weather, and from the effects of the stored material itself, and
  - the materials are stored in closed storage areas (NOTE: Covered storage areas that are protected from the effects of weather by means of a roof and enclosed sides in such a way that the stored material cannot escape the area are considered the same as closed storage areas.)

(Anlagenverordnung, Section 20)

- Facilities for the transfer of solid or liquid materials are considered to be of a simple or traditional kind if:
  - the area where the transfer takes place has a bottom surface that is impermeable and resistant to the substance being transferred under all operating and weather conditions,
  - the bottom surface is designed as a collection area with a slope, curb, or other device that leads via a leakproof connection to a collection device, a separator, or a processing facility, and
  - the facility has approved equipment that prevents the material being transferred from escaping, or other precautions are taken to keep releases from happening

(Anlagenverordnung, Section 21).

• *Specialist* - in the context of substances harmful to water, a specialist is a person who:
  - possesses equipment and personnel competent to guarantee that a facility complies with generally accepted technical standards, and
  - is authorized to bear the seal of approval of a recognized supervisory association or product association required under building law, or who has entered into a contract with a technical supervisory association that includes a supervision period of at least 2 yr

(WHG, Section 19L).

• *Storage Tanks* - permanent or movable tanks for storage; communicating tanks count as one tank (Anlagenverordnung, Section 2(1)).

• *Substances Harmful to Water* - includes the following:
  - crude oils, gasoline, diesel fuels, and heating oils
  - other fluid or gaseous substances capable of polluting water or otherwise degrading it

(WHG, Section 19a(2)).

Such substances as the following are included:

- acids, caustics
- alkali metals; silicons that contain more than 30 percent silicon; organometallic compounds, halogens, haloid acids, metal carbonyls, and corrosives
- petroleum and creosotes and their by-products
- liquid and water-soluble hydrocarbons, alcohols, aldehydes, ketones, esters; organic compounds that contain halogens, nitrogen, or sulfur,
- poisons

(WHG, Section 19g(5)).

Specifically included by regulation in the category of substances harmful to water are:

- liquid petroleum products such as naphtha, pyrolysis gasoline, and solvent naphtha
- creosotes, such as coaltar oils and lignite tar oils
- liquid hydrocarbons such as cyclohexane
- acetylene and ethylene
- organic acids such as acetic acid and acrylic acid
- aldehydes such as formaldehyde and acetaldehyde
- alcohols such as methanol and propylene glycol
- esters of acetic acid such as ethyl acetate and vinyl acetate
- halogenated hydrocarbons such as vinyl chloride, carbon tetrachloride, perchloroethylene, and dichloroethane
- nitrogenated hydrocarbons such as nitriles and amines
- aromatic compounds such as benzene, isopropylbenzene, toluene, and xylene
- inorganic acids and caustics such as sulfuric acid, hydrochloric acid, caustic soda
- chlorine
- ammonia
- solutions that contain salts in such a concentration that they are likely to pollute water or otherwise degrade it
- other liquid or gaseous substances that contain the substances listed in this definition in such a concentration that they are likely to pollute water or otherwise degrade it

(Verordnung ueber wassergefaehrdende Stoffe bei der Befoerderung in Rohrleitungsanlagen, Section 1(1); see also the *Katalog wassergefaehrdender Stoffe*).

- *Underground Pipelines* - pipelines that are completely embedded in the ground. Pipelines that are partially embedded in the ground and pipelines that are set up in such a way that leaks are not reliably and quickly obvious count as underground pipelines (Anlagenverordnung, Section 2(3)).

- *Underground Storage Tanks (UST)* - tanks that are completely embedded in the ground. Tanks that are partially embedded in the ground and tanks that are set up in such a way that leaks are not reliably and quickly obvious count as underground storage tanks (Anlagenverordnung, Section 2(2)).

POL MANAGEMENT

GUIDANCE FOR CHECKLIST USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PEOPLE OR GROUPS:(*)
All Installations	7-1 and 7-2	(1)(2)
Pipelines	7-3 and 7-4	(1)(2)(3)(4)(9)(10)(11)
Storage/Dispensing Areas	7-5 through 7-8	(3)(4)(5)(9)(10)(11)
Storage of Gasoline	7-9 and 7-10	(1)(3)(4)(5)(10)
Supervision of Storage and Transfer of Gasoline	7-11 through 7-13	(1)(3)(4)(5)(9)(10)
Gas Stations for Automobiles	7-14 through 7-17	(1)(3)(4)(5)(10)
Waste Oils	7-18 through 7-22	(3)(4)(8)(9)(11)
Facilities for the Storage of Combustible Liquids		
Notification	7-23 through 7-28	(1)(2)(4)(5)(7)
Permits	7-29 through 7-34	(1)(2)(4)(5)(7)
Inspection	7-35 and 7-36	(1)(2)(4)(5)(7)
Incident Reporting	7-37 and 7-38	(1)(2)(4)(5)(7)

(*)CONTACT/LOCATION CODE:

(1) BEC (Base Environmental Coordinator)
(2) BCE (Base Civil Engineer)
(3) BFMO (Base Fuels Management Office)
(4) LFM (Liquid Fuels Maintenance)
(5) BEE (Base Bioenvironmental Engineer)
(6) Base Fire Department
(7) Base Contracting Office
(8) Power Production
(9) AAFES (Army/Air Force Exchange Service) Service Station Manager
(10) Generating Activities
(11) Vehicle Maintenance Shop

POL MANAGEMENT

GUIDANCE FOR CHECKLIST USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PEOPLE OR GROUPS:(*)
Gasoline and Kerosine		
Storage Areas Not Subject to Notification or Permit Requirements	7-39 through 7-41	(1)(2)(4)(5)(7)
Storage Areas Subject to Notification or Permit Requirements	7-42 through 7-47	(1)(2)(4)(5)(7)
Storage Rooms Above and Below Groundlevel - Notification and Permit Requirements	7-48 through 7-52	(1)(2)(4)(5)(7)
Outdoor Storage in Aboveground Containers - Notification or Permit Requirements	7-53 through 7-55	(1)(2)(4)(5)(7)
Filling Stations in Rooms	7-56 through 7-63	(1)(2)(4)(5)(7)
Outdoor Filling Stations	7-64 through 7-68	(1)(2)(4)(5)(7)
Tank Stations	7-69 through 7-72	(1)(2)(4)(5)(7)
Dispensing Equipment at Tank Stations	7-73 through 7-81	(1)(2)(4)(5)(7)
General Provisions for Permanent Tanks (Metal or Nonmetal)	7-82 through 7-93	(1)(2)(4)(5)(7)
Permanent Tanks (Metal or Nonmetal) with Interior Overpressure	7-94 through 7-97	(1)(2)(4)(5)(7)
Metal Permanent Tanks	7-98 and 7-99	(1)(2)(4)(5)(7)
Portable Containers	7-100 and 7-101	(1)(2)(4)(5)(7)
Operational Requirements	7-102 through 7-104	(1)(2)(4)(5)(7)
Operational Requirements for Containers	7-105 through 7-111	(1)(2)(4)(5)(7)
Additional Operational Requirements for Permanent Tanks	7-112	(1)(2)(4)(5)(7)
Additional Operational Requirements for Transport Containers	7-113 and 7-114	(1)(2)(4)(5)(7)
Operational Requirements for Filling Stations	7-115 through 7-117	(1)(2)(4)(5)(7)

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POL MANAGEMENT

GUIDANCE FOR CHECKLIST USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PEOPLE OR GROUPS:(*)
Diesel Fuel and Fuel Oil	7-118 through 7-130	(1)(2)(4)(5)(7)
Rheinland-Pfalz Notification	7-131	(1)(2)(5)
Rheinland-Pfalz Pipelines	7-132	(1)(2)(3)(4)
Rheinland-Pfalz Storage/Dispensing Areas	7-133 through 7-137	(3)(4)(9)(10)(11)
Rheinland-Pfalz Accidents/Spills	7-138 through 7-140	(1)(2)(3)(4)(5)(6)
Rheinland-Pfalz Facilities in Protected Areas	7-141 through 7-143	(1)(2)(3)(4)(9)(10)(11)

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POL MANAGEMENT

Records to Review

- Records of all spills, leaks, and associated site assessment/cleanup activities (for 3 yr)
- Spill Prevention and Response Plan
- Records of spill response training

Physical Features to Inspect

- Refueling facilities, including:
  - aboveground storage tanks and dikes
  - venting
  - fill pipe
  - gauges
- Washrack areas
- Vehicle maintenance areas
- Oil separators
- Oil and hazardous substance site

Sources to Interview

- BEC (Base Environmental Coordinator)
- BCE (Base Civil Engineer)
- BFMO (Base Fuels Management Office)
- LFM (Liquid Fuels Maintenance)
- BEE (Base Bioenvironmental Engineer)
- Base Fire Department
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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL INSTALLATIONS	
7-1. Determine actions or changes since previous review of POL management (GMP).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report. (1)(2)
...	...
7-2. Installations should maintain a file of German laws and regulations that pertain to POL management (GMP).	Verify that copies of the following Federal laws and regulations are kept at the installation: (1)(2) - *Gesetz zur Ordnung des Wasserhaushalts (Wasserhaushaltsgesetz)* - *Verordnung ueber wassergefaehrdende Stoffe bei der Befoerderung in Rohrleitungsanlagen* - *Katalog wassergefaehrdender Stoffe* - *Zwanzigste Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung zur Begrenzung der Kohlenwasserstoffemissionen beim Umfuellen und Lagern von Ottokraftstoffen -- 20. BImSchV)* - *Einundzwanzigste Verordnung zur Durchfuehrung des Bundes-Immissionsschutzgesetzes (Verordnung zur Begrenzung der Kohlenwasserstoffemissionen bei der Betankung von Kraftfahrzeugen -- 21. BImSchV).* Verify that copies of the following state laws and regulations for Rheinland-Pfalz are kept at the installation: - *Wassergesetz fuer das Land Rheinland-Pfalz (Landeswassergesetz)* - *Landesverordnung ueber Anlagen zum Abfuellen und Umschlagen wassergefaehrdender Stoffe (Anlagenverordnung)* - *Landesverordnung ueber den Bau und Betrieb von Garagen und Stellplaetzen (Garagenverordnung).*
...	...
PIPELINES	
7-3. The construction and operation of pipeline facilities for substances harmful to water require a permit from the competent authority, as does significantly modifying such a facility or the way in which it is operated (WHG, Section 19a).	(NOTE: This does not apply to pipeline facilities that do not extend beyond the grounds of the installation nor to pipelines that are part of facilities for storing substances harmful to water.) Verify that the installation has the necessary permits for the construction and operation of and/or significant modifications to pipeline facilities for substances harmful to water or modifications to the way in which the facility is operated. (1)(2)(3)
...	...

(1) BEC (Base Environmental Coordinator) (2) BCE (Base Civil Engineer) (3) BFMO (Base Fuels Management Office) (4) LFM (Liquid Fuels Maintenance) (5) BEE (Base Bioenvironmental Engineer) (6) Base Fire Department (7) Base Contracting Office (8) Power Production (9) AAFES (Army/Air Force Exchange Service) Service Station Manager (10) Generating Activities (11) Vehicle Maintenance Shop

COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-4. Facilities that store, transfer, or treat substances harmful to water must be designed, built, maintained, and operated in conformity with generally accepted technical standards such that no pollution or degradation of water can occur (WHG, Section 19g(1)).	Verify that installations that store, transfer, or treat substances harmful to water are designed, built, maintained, and operated in conformity with generally accepted technical standards such that no pollution or degradation of water can occur. (1)(2)(3)(4)(9)(10)(11) (NOTE: This requirement applies to pipelines even if they do not extend beyond the installation's grounds.)
...	...
STORAGE / DISPENSING AREAS	
7-5. Anyone who fills or empties facilities for the storage of substances harmful to water must determine before starting work that the required safety devices are in good repair (WHG, Section 19k).	Verify that anyone who fills or empties facilities for the storage of substances harmful to water determines before starting work that the necessary safety devices are in good repair. (3)(4)(9)(10)(11)
...	...
7-6. The process of filling or emptying facilities for the storage of substances harmful to water must be supervised at all times (WHG, Section 19k).	Verify that the process of filling or emptying facilities for the storage of substances harmful to water is supervised at all times. (3)(4)(9)(10)(11)
...	...
7-7. Load capacity limits for the facility and for the safety devices must be observed in the process of filling or emptying facilities for the storage of substances harmful to water (WHG, Section 19k).	Verify that load capacity limits for the facility and for the safety devices are observed in the process of filling or emptying facilities for the storage of substances harmful to water. (3)(4)(9)(10)(11)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-8. Facilities that store, transfer, or treat substances harmful to water may be designed, built, maintained, repaired, and cleaned by specialists only (WHG, Section 19L).	Verify that facilities that store, transfer, or treat substances harmful to water are designed, built, maintained, repaired, and cleaned by specialists only. (3)(4)(5)(9)(10)(11) (NOTE: The states may designate activities that persons other than specialists may carry out.)
...	...
STORAGE OF GASOLINE	
7-9. Permanent aboveground storage facilities for gasoline must be painted in accordance with certain requirements (20. BImSchV, Section 4).	Verify that permanent aboveground storage facilities for gasoline have a coat of paint that reflects at least 70 percent of the sun's light at the time of its application and at least 50 percent of it in the long run. (1)(3)(4)(5)(10)
...	...
7-10. Facilities are to be equipped with vacuum/pressure valves [*Vakuum/Druck-Ventilen*], unless safety considerations dictate otherwise (20. BImSchV, Section 4).	Verify that facilities are equipped with vacuum/pressure valves [*Vakuum/Druck-Ventilen*], unless safety considerations dictate otherwise. (1)(3)(5)(10)
...	...
SUPERVISION OF STORAGE AND TRANSFER OF GASOLINE	
7-11. The competent authority must be notified of plans to build permanent facilities (20. BImSchV, Section 7(1)).	Verify that the competent authority is notified of plans to build permanent facilities. (1)(3)(4)(5)(10)
...	...
7-12. The competent authority must be notified of existing facilities (20. BImSchV, Section 7(1)).	Verify that the competent authority has been notified of existing facilities. (1)(3)(4)(5)(9)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-13. A report on compliance with emission standards must be produced (20. BImSchV, Section 7(3)).	Verify that a report is produced on compliance with emission standards and that it is kept onsite for 3 yr. (1)(3)(4)(5)(10) Verify that a copy of the report on permanent facilities is sent to the competent authority within 4 weeks of the compliance check. (NOTE: Although reports must be written on mobile equipment, they need be shown to the competent authority on demand only.)
...	...
GAS STATIONS FOR AUTOMOBILES	
7-14. The operators of gas stations must provide suitable, tightly closable openings through which certain measurements can be taken (21. BImSchV, Section 4).	Verify that the operators of gas stations have provided suitable, tightly closable openings through which it is possible to measure the following: (1)(3)(4)(5)(10) - the free passage of gasoline in the gas recycling system is guaranteed at a sufficiently low flow resistance - the back pressure at the fill nozzle does not exceed the manufacturer's specifications - for gas recycling systems that have vacuum assist, it must be possible to take measurements that allow the volumetric ratio of returned gasoline fumes/air mixture to the fuel that goes into the tank to be calculated.
...	...
7-15. The competent authority must be notified of plans to build gas stations (21. BImSchV, Section 6(1)).	Verify that the competent authority is notified of plans to build gas stations. (1)(3)(4)(5)(10)
...	...
7-16. The competent authority must be notified of existing gas stations by 1 September 1993 (21. BImSchV, Section 6(1)).	Verify that the competent authority is notified of existing gas stations by 1 September 1993. (1)(3)(4)(5)(10) (NOTE: The notification must include the amount of gasoline dispensed in the previous calendar year.)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-17. The installation must calculate the amount of gasoline dispensed at each of its gas stations in the previous calendar year by 1 February of every year (21. BImSchV, Section 6(5)).	Verify that the installation calculates the amount of gasoline dispensed at each of its gas stations in the previous calendar year by 1 February of every year. (1)(3)(4)(5)(10) Verify that records of these calculations are kept onsite for 3 yr so that they may be produced on demand. (NOTE: Neither of these requirements applies if the gas recycling system complies with the provisions of 21. BImSchV, Section 3(1) (see checklist item 1-142, *Air Emissions Management*.))
...	...
WASTE OILS	
7-18. Oil from internal combustion engines, transmission oil, and petroleum-based machine-, turbine-, and hydraulic oils must be reconditioned (AbfG, Section 1a(2), AltoelV, Section 2).	Verify that oil from internal combustion engines, transmission oil, and petroleum-based machine-, turbine-, and hydraulic oils are being reconditioned. (3)(4)(8)(9)(11)
...	...
7-19. Other waste oils may be reconditioned only if they contain no harmful substances that make the reconditioning process more difficult or that accumulate in the products that result from reconditioning (AltoelV, Section 2).	Verify that other waste oils are being reconditioned only if they contain no harmful substances that make the reconditioning process more difficult or that accumulate in the products that result from reconditioning. (3)(4)(8)(9)(11)
...	...
7-20. Waste oils may not be reconditioned if they contain certain levels of Polychlorinated Biphenyls (PCBs) or halogens (AltoelV, Section 3).	Verify that waste oils are not being reconditioned if they contain more than 20 milligrams (mg) PCBs/kilograms (kg) or more than 2 grams (g) of total halogens/kg. (3)(4)(8)(9)(11) (NOTE: Such oils may be reconditioned if the PCBs or halogens are destroyed in the process of reconditioning or are contained only in small amounts in the resultant product.)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-21. PCB-based synthetic oils and substitution products that contain halogens (such as can be found in transformers, condensors, and hydraulic equipment) must be kept, collected, transported, and disposed of separately from other waste oil (AltoelV, Section 4(1)).	Verify that PCB-based synthetic oils and substitution products that contain halogens (such as can be found in transformers, condensors, and hydraulic equipment) are kept, collected, transported, and disposed of separately from other waste oil. (3)(4)(8)(9)(11) (NOTE: Facilities for reconditioning, thermal treatment, or disposal of waste oil that are listed in Table 1-1 (*Air Emissions Management*) and similar facilities the plans for which have been officially approved are not subject to this restriction if such mixing is included as a part of the permit.)
...	...
7-22. PCB-based synthetic oils and substitution products that contain halogens (such as can be found in transformers, condensors, and hydraulic equipment) may not be mixed with other waste oils or with any other hazardous waste (AltoelV, Section 4(2)).	Verify that PCB-based synthetic oils and substitution products that contain halogens (such as can be found in transformers, condensors, and hydraulic equipment) are not being mixed with other waste oils or with any other hazardous waste. (3)(4)(8)(9)(11) (NOTE: Facilities for reconditioning, thermal treatment, or disposal of waste oil that are listed in Table 1-1 (*Air Emissions Management*) and similar facilities the plans for which have been officially approved are not subject to this restriction if such mixing is included as a part of the permit.)
...	...
FACILITIES FOR THE STORAGE OF COMBUSTIBLE LIQUIDS **Notification**	(NOTE: This section does not apply if combustible liquids are part of the working process in the workplace, if they are kept at hand in the quantities necessary for the work carried out in the workplace, if they are stored (for short periods only) as finished products or intermediate products of the workplace, or if they are stored in quantities necessary for laboratory use.)
7-23. The supervisory authority must be informed of the existence of facilities for the storage of combustible liquids of gasoline or kerosine under certain circumstances (VbF, Section 8(1)(1)).	Verify that the supervisory authority has been informed of the existence of facilities for the storage of gasoline or kerosine in the manners and amounts listed in Table 2-3 (*Hazardous Materials Mangement*). (1)(2)(4)(5)(7) (NOTE: Facilities that store combustible liquids of diesel fuel or fuel oil exclusively are not subject to this notification requirement.)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-24. The supervisory authority must be informed of the existence of filling stations in enclosed areas in which more than 200 L but less than a total of 1000 L/hour (h) per room of gasoline or kerosine can be drawn off (VbF, Section 8(1)(2)).	Verify that the supervisory authority has been informed of the existence of filling stations in enclosed areas in which more than 200 L but less than a total of 1000 L/h per room of gasoline or kerosine can be drawn off. (1)(2)(4)(5)(7)
...	...
7-25. The supervisory authority must be informed of the existence of filling stations for diesel fuel or fuel oil under certain circumstances (VbF, Section 8(1)(3)).	Verify that the supervisory authority has been informed of the existence of filling stations for diesel fuel or fuel oil that are in the same room with stations in enclosed areas in which more than 200 L but less than a total of 1000 L/h per room of gasoline or kerosine can be drawn off. (1)(2)(4)(5)(7)
...	...
7-26. Anyone who puts a facility subject to notification requirements into operation must inform the supervisory authority prior to putting it into operation (VbF, Section 8(4)).	Verify that the supervisory authority is notified of the facility's existence prior to putting it in operation. (1)(2)(4)(5)(7) Verify that the notification includes all such documentation as is necessary to evaluate it.
...	...
7-27. If a facility that requires a permit (see below) is taken out of operation for longer than 6 months (mo), the supervisory authority must be notified when the 6 mo have ended (VbF, Section 2).	Verify that the installation notifies the supervisory authority after 6 mo have passed if a facility that requires a permit is taken out of operation for longer than 6 mo. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-28. If a facility that requires a permit (see below) has been out of operation for more than 6 mo, the supervisory authority must be informed in advance if it is to be put back into operation (VbF, Section 22).	Verify that the supervisory has been informed in advance if a facility that requires a permit is being put back into operation after having been out of operation for more than 6 mo. (1)(2)(4)(5)(7)
...	...
Permits	(NOTE: This section does not apply if combustible liquids are part of the working process in the workplace, if they are kept at hand in the quantities necessary for the work carried out in the workplace, if they are stored (for short periods only) as finished products or intermediate products of the workplace, or if they are stored in quantities necessary for laboratory use.)
7-29. The construction and operation of and substantial modifications to facilities for the storage of gasoline or kerosine requires a permit from the competent authority in certain circumstances (VbF, Section 9(1)(1), Section 9(3), Section 10).	Verify that facilities that meet the conditions set forth in Table 7-2 have the required permits. (1)(2)(4)(5)
...	...
7-30. The construction and operation of and substantial modifications to facilities for the storage of gasoline or kerosine requires a permit from the competent authority in certain circumstances (VbF, Section 9(1)(1), Section 9(3), Section 10).	Verify that facilities that meet the conditions set forth in Table 7-2 have the required permits. (1)(2)(4)(5) (NOTE: Facilities that store combustible liquids of Dangerous-Materials Class AIII exclusively are not subject to this notification requirement.)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT Germas	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-31. The construction and operation of and substantial modifications to certain types of filling stations require a permit from the competent authority (VbF, Section 9(1)(2), Section 9(3), Section 10).	Verify that the following types of filling stations have the required permits: (1)(2)(4)(5) - those in enclosed areas in which more than a total of 1000 L/h per room of combustible liquids of gasoline or kerosine can be drawn off - those for diesel fuel or fuel oil that are in the same room with those in enclosed areas in which more than a total of 1000 L/h per room of gasoline or kerosine can be drawn off - those located out of doors for gasoline or kerosine, as well as those for diesel fuel or fuel oil that are connected to filling stations for gasoline or kerosine.
...	...
7-32. The construction and operation of and substantial modification to gas stations require a permit from the competent authority (VbF, Section 9(1)(4), Section 9(3), Section 10).	Verify that the installation's gas stations have the required permits. (1)(2)(4)(5) (NOTE: Gas stations that store diesel fuel or fuel oil only, and those where diesel fuel or fuel oil only are drawn off, are not subject to this permitting requirement.)
...	...
7-33. The construction and operation of and substantial modifications to connecting lines (see definition) require a permit from the competent authority (VbF, Section 9(1)(4), Section 9(3), Section 10).	Verify that the installation's connecting lines have construction and operation permits. (1)(2)(4)(5)
...	...
7-34. Installations that construct or operate facilities for the storage, filling, or transfer of combustible liquids on land may use certain types of equipment in those facilities only if that equipment has official design approval from the competent authority (VbF, Section 12).	Verify that installations that construct or operate facilities for the storage, filling, or transfer of combustible liquids on land use the following types of equipment in those facilities only if that equipment has official design approval from the competent authority: (1)(2)(4)(5)(7) - equipment that heats up in the course of operation, or forms sparks, and has the potential to cause ignition, if that equipment is used in Zone 0; especially immersion pumps, stirring apparatus, and equipment for taking measurements (i.e., liquid-level indicators, level modulators and indicators, and equipment that measures temperature, pressure, or density) - equipment that is intended to ensure that flames cannot enter a container (flashback inhibitors) - safety equipment to prevent overfilling; fill nozzles with automatic shutoff devices - leak-detection devices

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-34. (continued)	- tanks and the fill systems connected to them, if the load-bearing walls are not all metal - tubes and fittings the walls of which are not all metal - non-metallic inner layers and outer cladding for tanks, and the way in which those are attached to the tank - portable containers for gasoline or kerosine with a capacity of more than 1 L, if their load-bearing walls are not all metal.
...	...
Inspection	(NOTE: This section does not apply if combustible liquids are part of the working process in the workplace, if they are kept at hand in the quantities necessary for the work carried out in the workplace, if they are stored (for short periods only) as finished products or intermediate products of the workplace, or if they are stored in quantities necessary for laboratory use.)
7-35. Certain facilities must be inspected by specialists in certain circumstances (VbF, Sections 13(1), 13(2)).	(NOTE: It is the responsibility of the installation to arrange for the necessary inspections.) Verify that the following facilities are inspected by specialists before they are put into operation, and every five yr thereafter, or before they are put back into operation after their design or operation has been substantially modified, or if they have been out of operation for more than 1 yr: (1)(2)(4)(5)(7) - storage facilities that require a permit (see above) (NOTE: Storage areas for portable containers are exempted.) - storage areas for portable containers, if the areas require a permit (NOTE: VbF appears to contradict itself at this point.) - outdoor storage areas for aboveground containers, if the areas require a permit, and storage areas for underground tanks.
...	...
7-36. The certificate of inspection or a copy of it must be kept near the facility (VbF, Section 18(3)).	Verify that the certificate of inspection or a copy of it is kept near the facility. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Incident Reporting	(NOTE: This section does not apply if combustible liquids are part of the working process in the workplace, if they are kept at hand in the quantities necessary for the work carried out in the workplace, if they are stored (for short periods only) as finished products or intermediate products of the workplace, or if they are stored in quantities necessary for laboratory use.)
7-37. The supervisory authority must be notified immediately of the certain events (VbF, Section 23(1)).	Verify that the supervisory authority is notified immediately of the following events: (1)(2)(4)(5)(7) - an explosion - a fire - an unintentional release of combustible liquid from a container or pipeline, if the release occurs at a rate greater than 10 L/h - an injury accident involving the dangers that are typically associated with the facility.
...	...
7-38. Facilities for the storage, filling, or transfer of combustible liquids must have access routes for firefighters that are so laid out and labelled that locations where fires are likely to occur can be reached quickly and unhindered (VbF, Appendix II, 100.5(2)).	Verify that facilities for the storage, filling, or transfer of combustible liquids have access routes for firefighters that are so laid out and labelled that locations where fires are likely to occur can be reached quickly and unhindered. (1)(2)(4)(5)(7)
...	...
GASOLINE AND KEROSINE **Storage Areas Not Subject to Notification or Permit Requirements**	
7-39. Buildings and outdoor aboveground tanks must be separated by enough distance to prevent one from catching fire from the other (VbF, Appendix II, 110.1(3)).	Verify that buildings and outdoor aboveground tanks are separated by enough distance to prevent one catching fire from the other. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-40. Storage rooms above and belowground level and storage areas for aboveground containers may not be accessible to general traffic (VbF, Appendix II, 110.1(4)).	Verify that storage rooms above and belowground level and storage areas for aboveground containers are not accessible to general traffic. (1)(2)(4)(5)(7)
...	...
7-41. Unauthorized persons may not enter indoor or outdoor storage areas, and an easily legible, readily visible sign must be present to indicate that fact (VbF, Appendix II, 110.1(5)).	Verify that unauthorized persons do not have access to indoor or outdoor storage areas. (1)(2)(4)(5)(7) Verify that an easily legible, readily visible sign is posted to indicate that access is forbidden to unauthorized persons.
...	...
Storage Areas Subject to Notification or Permit Requirements	
7-42. Gasoline and kerosine may not be stored with EL fuel oil in a subdivided tank (VbF, Appendix II, 110.2(1)).	Verify that gasoline and kerosine are not stored with EL fuel oil in a subdivided tank. (1)(2)(4)(5)(7)
...	...
7-43. Combustible liquids must be stored in containers from which they cannot escape, or they must be stored in such a way that escaping combustible liquids can be contained, identified, and disposed of (VbF, Appendix II, 110.2(2)).	Verify that combustible liquids are stored in containers from which they cannot escape, or are stored in such a way that escaping combustible liquids can be contained, identified, and disposed of. (1)(2)(4)(5)(7) (NOTE: This requirement does not apply to combustible liquids stored aboveground in very small quantities.)
...	...
7-44. The capacity of containment areas is to be sufficiently great that what is stored in the area cannot escape the containment area (VbF, Appendix II, 110.2(3)).	Verify that the capacity of containment areas is sufficiently great that what is stored in the area cannot escape the containment area. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-45. Containment areas must be built of nonflammable materials and must be sufficiently impermeable and leakproof (VbF, Appendix II, 110.2(4)).	Verify that containment areas are built of nonflammable materials and are sufficiently impermeable and leakproof. (1)(2)(4)(5)(7)
...	...
7-46. Storage areas both above and belowground level, and outdoor storage areas for aboveground containers, may not be accessible to general traffic (VbF, Appendix II, 110.2(5)).	Verify that storage areas both above and belowground level, and outdoor storage areas for aboveground containers, are not accessible to general traffic. (1)(2)(4)(5)(7)
...	...
7-47. Unauthorized persons may not enter indoor or outdoor storage areas, and an easily legible, readily visible sign must be present to indicate that fact (VbF, Appendix II, 110.2(6)).	Verify that unauthorized persons do not have access to indoor or outdoor storage areas. (1)(2)(4)(5)(7) Verify that an easily legible, readily visible sign is posted to indicate that access is forbidden to unauthorized persons.
...	...
Storage Rooms Above and Below Groundlevel - Notification and Permit Requirements	
7-48. The quantities of combustible liquids stored in storage rooms are to be consistent with the storage area's fire load (VbF, Appendix II, 110.3(1)).	Verify that the quantities of combustible liquids stored in storage rooms are consistent with the storage area's fire load. (1)(2)(4)(5)(7) (NOTE: "Fire load" is not defined.)
...	...
7-49. The walls, ceilings, and doors of storage rooms must at least be fire-resistant and must be built of noncombustible materials (VbF, Appendix II, 110.3(2)).	Verify that the walls, ceilings, and doors of storage rooms are at least fire-resistant and are built of noncombustible materials. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-50. Storage rooms must be separated from other rooms by fireproof walls (VbF, Appendix II, 110.3(3)).	Verify that storage rooms are separated from other rooms by fireproof walls. (1)(2)(4)(5)(7)
...	...
7-51. Storage rooms may not be located next to rooms that are or may be occupied by people for more than a brief period of time (VbF, Appendix II, 110.3(4),(5)).	Verify that storage rooms are not located next to rooms that are or may be occupied by people for more than a brief period of time. (1)(2)(4)(5)(7) (NOTE: Rooms that are used by storage area personnel are not included in the scope of this requirement.)
...	...
7-52. Storage rooms must be adequately illuminated and ventilated (VbF, Appendix II, 110.3(6)).	Verify that storage rooms are adequately illuminated and ventilated. (1)(2)(4)(5)(7)
...	...
Outdoor Storage in Aboveground Containers - Notification or Permit Requirements	
7-53. Buildings and outdoor aboveground tanks must be separated by enough distance to prevent one from catching fire from the other (VbF, Appendix II, 110.4(1)).	Verify that buildings and outdoor aboveground tanks are separated by enough distance to prevent one catching fire from the other. (1)(2)(4)(5)(7)
...	...
7-54. There must be sufficient distance between tanks to allow for effective firefighting (VbF, Appendix II, 110.4(2)).	Verify that there is sufficient distance between tanks to allow for effective firefighting. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-55. Storage areas must be surrounded by a safety strip that is consistent with the design of the containers and with the amount of combustible material stored in the area (VbF, Appendix II, 110.4(3)).	Verify that storage areas are surrounded by a safety strip that is consistent with the design of the containers and with the amount of combustible material stored in the area. (1)(2)(4)(5)(7)
...	...
Filling Stations in Rooms	
7-56. Rooms with filling stations that are not subject to notification or permitting requirement may not be accessible to general traffic (VbF, Appendix II, 111.2(1)).	Verify that rooms with filling stations that are not subject to notification or permitting requirement are not accessible to general traffic. (1)(2)(4)(5)(7)
7-57. Rooms with filling stations that are not subject to notification or permitting requirement must be separated from other rooms by fire-proof walls (VbF, Appendix II, 111.2(1)).	Verify that rooms with filling stations that are not subject to notification or permitting requirement are separated from other rooms by fire-proof walls. (1)(2)(4)(5)(7)
...	...
7-58. Gasoline and kerosine may not be stored with EL fuel oil in a subdivided tank (VbF, Appendix II, 110.2(1)).	Verify that gasoline and kerosine are not stored with EL fuel oil in a subdivided tank. (1)(2)(4)(5)(7)
...	...
7-59. Combustible liquids must be stored in containers from which they cannot escape, or they must be stored in such a way that escaping combustible liquids can be contained, identified, and disposed of (VbF, Appendix II, 111.2(2)).	Verify that combustible liquids are stored in containers from which they cannot escape, or are stored in such a way that escaping combustible liquids can be contained, identified, and disposed of. (1)(2)(4)(5)(7) (NOTE: This requirement does not apply to combustible liquids stored aboveground in very small quantities.)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-60. The capacity of containment areas is to be sufficiently great that what is stored in the area cannot escape the containment area (VbF, Appendix II, 111.2(2)).	Verify that the capacity of containment areas is sufficiently great that what is stored in the area cannot escape the containment area. (1)(2)(4)(5)(7)
...	...
7-61. Containment areas must be built of nonflammable materials and must be sufficiently impermeable and leakproof (VbF, Appendix II, 111.2(2)).	Verify that containment areas are built of nonflammable materials and are sufficiently impermeable and leakproof. (1)(2)(4)(5)(7)
...	...
7-62. Storage areas both above and belowground level, and outdoor storage areas for aboveground containers, may not be accessible to general traffic (VbF, Appendix II, 110.2(5)).	Verify that storage areas both above and belowground level, and outdoor storage areas for aboveground containers, are not accessible to general traffic. (1)(2)(4)(5)(7)
...	...
7-63. The floors of rooms with filling stations must be designed in such a way that escaping combustible liquids can be identified and disposed of, and they must be sufficiently impermeable and leakproof (VbF, Appendix II, 111.2(3)).	Verify that the floors of rooms with filling stations are designed in such a way that escaping combustible liquids can be identified and disposed of. (1)(2)(4)(5)(7) Verify that the floors of rooms with filling stations are sufficiently impermeable and leakproof.
...	...
Outdoor Filling Stations	
7-64. Operating equipment must be readily accessible, and one must be able to leave the area where it is located quickly and safely (VbF, Appendix II, 111.3 (1)).	Verify that operating equipment is readily accessible, and that one can leave the area where it is located quickly and safely. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-65. Rapid shut-off equipment must be present in the area served by the filling equipment (VbF, Appendix II, 111.3(2)).	Verify that rapid shut-off equipment is present in the area served by the filling equipment. (1)(2)(4)(5)(7)
...	...
7-66. The surface in the area of the outdoor filling station must meet certain requirements (VbF, Appendix II, 111.3(3)).	Verify that the surface in the area of the outdoor filling station is so designed that escaping combustible liquids can be recognized and disposed of. (1)(2)(4)(5)(7) Verify that the surface in the area of the outdoor filling station is sufficiently impermeable and leakproof.
...	...
7-67. Filling stations for the tanks of tank trucks must be so designed that the area can be evacuated quickly in the event of an emergency (VbF, Appendix II, 111.3(4)).	Verify that filling stations for the tanks of tank trucks are so designed that the area can be evacuated quickly in the event of an emergency. (1)(2)(4)(5)(7)
...	...
7-68. Unauthorized persons may not have access to outdoor filling stations (VbF, Appendix II, 111.3(7)).	Verify that unauthorized persons are not allowed access to outdoor filling stations. (1)(2)(4)(5)(7) Verify that signs are provided that forbid such access in a readily visible and legible format.
...	...
Tank Stations	
7-69. Fuel stored at tank stations is to be stored in accordance with certain provisions (VbF, Appendix II, 112.2(1)).	Verify that fuel is stored in one of the following ways: (1)(2)(4)(5)(7) - in underground tanks that are surrounded on all sides by an earthen covering no less than 0.8 m deep - in aboveground tanks with fuel dispensers whose contents is not greater than 1000 L on land that is not accessible to public traffic - in aboveground storage tanks whose contents is not greater than 30,000 L on parts of the property of airports that are not accessible to public traffic or to aircraft ground traffic.
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**RFVIEWER CHECKS:**
7-70. Diesel fuel and fuel oil may be stored within the effective horizontal range of a fill nozzle for gasoline and kerosine under certain conditions only (VbF, Appendix II, 112.2(2)).	Verify that diesel fuel and fuel oil are stored within the effective horizontal range of a fill nozzle for gasoline and kerosine under the following conditions only: (1)(2)(4)(5)(7) - in underground tanks that are surrounded on all sides by an earthen covering - in underground tanks with a capacity of no more than 5000 L, if the level of liquid stored does not reach aboveground level - in aboveground tanks with a capacity of no more than 1000 L.
...	...
7-71. Fuel may not be stored together with EL fuel oil in subdivided tanks (VbF, Appendix II, 112.2(3)).	Verify that fuel is not stored together with EL fuel oil in subdivided tanks. (1)(2)(4)(5)(7)
...	...
7-72. The total amount of combustible liquids stored at a tank station may not exceed certain limits (VbF, Appendix II, 112.2(4)).	Verify that the total amount of combustible liquids stored at a tank station does not exceed the following limits: (1)(2)(4)(5)(7) - in aboveground tanks with fuel dispensers that have a capacity of up to 1000 L, not more than 2000 L may be stored - not more than 200 L may be stored in small fuel dispensers [Kleinzapfgeraete].
...	...
Dispensing Equipment at Tank Stations	
7-73. Only appropriate dispensing equipment may be used for dispensing fuel (VbF, Appendix II, 112.3(1)).	Verify that appropriate dispensing equipment only is used for dispensing fuel. (1)(2)(4)(5)(7)
...	...
7-74. Dispensing equipment and aboveground tanks may not be set up or installed belowground or in cellars (VbF, Appendix II, 112.3(3)).	Verify that neither dispensing equipment nor aboveground tanks are set up or installed belowground or in cellars. (1)(2)(4)(5)(7) (NOTE: The transfer and measurement devices of nozzle systems are not subject to this restriction.)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-75. Dispensing equipment may not be located aboveground in or under buildings with rooms that are or may be occupied by persons for more than brief periods of time (VbF, Appendix II, 112.3(4)).	Verify that no dispensing equipment is located aboveground in or under buildings with rooms that are or may be occupied by persons for more than brief periods of time. (1)(2)(4)(5)(7) (NOTE: This restriction does not apply if the necessary structural and operational safety precautions have been taken in each particular case.)
...	...
7-76. No drains or openings to deep-lying rooms, cellars, trenches, pits, or conduits (e.g., for cables or pipelines) may be present within the effective horizontal range of a fill nozzle for gasoline or kerosine (VbF, Appendix II, 112.3(5)).	Verify that no drains or openings to deep-lying rooms, cellars, trenches, pits, or conduits are present within the effective horizontal range of a fill nozzle for gasoline or kerosine. (1)(2)(4)(5)(7) (NOTE: This prohibition does not apply to drains and openings that are located more than 0.8 m aboveground level, to dome shafts of underground tanks, to shafts for transfer equipment located belowground, or to base shafts [Sockelschaechten], inspection shafts, or manholes for dispensing equipment.)
...	...
7-77. The surface within the effective horizontal range of a fill nozzle for gasoline or kerosine must meet certain requirements (VbF, Appendix II, 112.3(6)).	Verify that the surface within the effective horizontal range of a fill nozzle for gasoline or kerosine is so designed that escaping combustible liquids can be recognized and disposed of. (1)(2)(4)(5)(7) Verify that the surface within the effective horizontal range of a fill nozzle for combustible liquids of Dangerous-Materials Classes AI, AII, or B is sufficiently impermeable and leakproof.
...	...
7-78. Small fuel dispensers [Kleinzapfgeraete] may be used as dispensing equipment only if the contents of their containers does not exceed 100 L (VbF, Appendix II, 112.3(8)).	Verify that small fuel dispensers [Kleinzapfgeraete] are used as dispensing equipment only if the contents of their containers does not exceed 100 L. (1)(2)(4)(5)(7)
...	...
7-79. Automatic gas pumps and self-service dispensing equipment must have fill nozzles that shut off automatically (VbF, Appendix II, 112.3(9)).	Verify that automatic gas pumps self-service dispensing equipment have fill nozzles that shut off automatically. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-80. Automatic gas pumps must be designed so that the transfer equipment is automatically shut off after a certain amount has been dispensed (VbF, Appendix II, 112.3(10)).	Verify that automatic gas pumps are designed so that the transfer equipment is automatically shut off after a certain amount has been dispensed. (1)(2)(4)(5)(7)
...	...
7-81. Signs bearing certain information must be posted in the area. (VbF, Appendix II, 112.4).	Verify that clearly visible and easily legible signs are located in the area that indicate that: (1)(2)(4)(5)(7) - neither smoking nor external heating [Fremdheizung] is permitted - that one may not fill up with the motor running are located in the area.
...	...
General Provisions for Permanent Tanks (Metal or Nonmetal)	
7-82. The walls of permanent tanks, whether of metal or not, must meet certain requirements (VbF, Appendix II, 120.2).	Verify that the walls of permanent tanks, whether of metal or not, meet the following requirements: (1)(2)(4)(5)(7) - tank walls are able to meet the mechanical, chemical, and thermal demands that can be expected to be placed on them - tank walls are impervious to the combustible liquids they may contain and to vapors generated by those liquids - tank walls are age-resistant and fireproof - tank walls are so designed that they do not give rise to electrostatic charges.
...	...
7-83. Permanent tanks, whether of metal or not, must meet certain requirements (VbF, Appendix II, 120.3).	Verify that permanent tanks, whether of metal or not, meet the following requirements: (1)(2)(4)(5)(7) - tanks must be structurally sound and so designed that they are able to meet the demands placed on them and remain free of leaks - tanks must be resistant to the static pressure of the liquid they contain, to excess or reduced pressures that might arise in the course of operation, and to external strains and influences - if combustible liquids of various Dangerous-Materials Classes or combustible liquids that could have dangerous by products if mixed are stored together in a subdivided tank, the compartments must be separate such that the liquids and their vapors cannot interact.
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-84. Permanent tanks must be set up on foundations and installed in such a way that shifts and dips that could compromise the safety of the tanks or their equipment cannot occur (VbF, Appendix II, 120.4).	Verify that permanent tanks are set up on foundations and installed in such a way that shifts and dips that could compromise the safety of the tanks or their equipment cannot occur. (1)(2)(4)(5)(7)
...	...
7-85. Tanks must have ventilation and pressure release equipment that prevents dangerous overpressures or underpressures from arising (VbF, Appendix II, 120.5(1)).	Verify that tanks have ventilation and pressure release equipment that prevents dangerous overpressures or underpressures from arising. (1)(2)(4)(5)(7)
...	...
7-86. Tanks must have such safety equipment as is necessary harmlessly to draw off air/vapor mixtures that arise in the course of filling (VbF, Appendix II, 120.5(2)).	Verify that tanks have such safety equipment as is necessary harmlessly to draw off air/vapor mixtures that arise in the course of filling. (1)(2)(4)(5)(7)
...	...
7-87. Tank openings through which flames might be able to enter the tank must have valves that prevent flashback (VbF, Appendix II, 120.5(3)).	Verify that tank openings through which flames might be able to enter the tank have valves that prevent flashback. (1)(2)(4)(5)(7) (NOTE: This requirement does not apply to the openings of tanks in which explosive conditions can be expected not to arise given the circumstances, nor to those tanks that could suffer the explosion of air/vapor mixtures inside them without themselves exploding. Further, it does not apply to the following: - tank openings that are securely shut in the course of operation and are so secure that no unintentional loosening of seals is possible - lockable openings for manual gauging - gauge pipes for tanks with floating covers - openings of floating covers the caps of which are opened only when the cover rests on its supports.)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-88. All tanks must be equipped with a device that indicates fluid level (VbF, Appendix II, 120.5(4)).	Verify that all tanks are equipped with a device that indicates fluid level. (1)(2)(4)(5)(7) (NOTE: Level indicators are not required on aboveground tanks made of synthetic material that is sufficiently transparent to allow the level of the liquid to be visible.)
...	...
7-89. All tanks must be equipped with overflow prevention devices that either sound an alarm or interrupt the process of filling if an overflow is going to occur (VbF, Appendix II, 120.5 (5)).	Verify that all tanks are equipped with overflow prevention devices that either sound an alarm or interrupt the process of filling if an overflow is going to occur. (1)(2)(4)(5)(7)
...	...
7-90. Any connection to a pipeline below the permissible liquid level of a tank must have a shut-off device (VbF, Appendix II, 120.5(6)).	Verify that any connection to a pipeline below the permissible liquid level of a tank has a shut-off device. (1)(2)(4)(5)(7)
...	...
7-91. All tanks must have at least one opening through which the tank may be entered or inspected visually (VbF, Appendix II, 120.5(7)).	Verify that all tanks have at least one opening through which the tank may be entered or inspected visually. (1)(2)(4)(5)(7)
...	...
7-92. Pipelines that conduct liquid and are part of the equipment of tanks are subject to certain requirements (VbF, Appendix II, 120.5(8)).	Verify that pipelines that conduct liquid and are part of the equipment of tanks meet the following requirements: (1)(2)(4)(5)(7) - such pipelines are able to meet the mechanical, chemical, and thermal demands that can be expected to be placed on them - such pipelines are impervious to the combustible liquids they may contain and to vapors generated by those liquids - such pipelines are age-resistant and fireproof - such pipelines are so designed that they do not give rise to electrostatic charges - such pipelines must be structurally sound and so designed that they are able to meet the demands placed on them and remain free of leaks - such pipelines must be resistant to the static pressure of the liquid they contain, to excess or reduced pressures that might arise in the course of operation, and to external strains and influences.
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-93. All tanks must have manufacturer's placards that give all the information necessary to distinguish them (VbF, Appendix II, 120.6).	Verify that all tanks have manufacturer's placards that give all the information necessary to distinguish them. (1)(2)(4)(5)(7)
...	...
Permanent Tanks (Metal or Nonmetal) with Interior Overpressure	
7-94. Permanent tanks with interior overpressure must be equipped with a device that allows the interior pressure to be monitored (VbF, Appendix II, 120.7(1)).	Verify that permanent tanks with interior overpressure are equipped with a device that allows the interior pressure to be monitored. (1)(2)(4)(5)(7)
...	...
7-95. Permanent tanks with interior overpressure must have a safety device that prevents permissible pressures from being exceeded, if permissible pressures can indeed be exceeded (VbF, Appendix II, 120.7(2)).	Verify that permanent tanks with interior overpressure have a safety device that prevents permissible pressures from being exceeded, if permissible pressures can indeed be exceeded. (1)(2)(4)(5)(7)
...	...
7-96. Tanks with interior overpressure that may be opened in the course of operation must have release equipment that can be operated by hand (VbF, Appendix II, 120.7(3)).	Verify that tanks with interior overpressure that may be opened in the course of operation have release equipment that can be operated by hand. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-97. Tanks in which it is possible that an interior overpressure might arise but that are not resistant to interior overpressure must be equipped with a device that prevents interior overpressures from arising (VbF, Appendix II, 120.7(4)).	Verify that tanks in which it is possible that an interior overpressure might arise but that are not resistant to interior overpressure are equipped with a device that prevents interior overpressures from arising. (1)(2)(4)(5)(7)
...	...
Metal Permanent Tanks	
7-98. Tanks that are made of materials that are not corrosion-resistant must be protected against external corrosion (VbF, Appendix II, 121.1(1)).	Verify that tanks that are made of materials that are not corrosion-resistant are protected against external corrosion. (1)(2)(4)(5)(7)
...	...
7-99. The interior walls of tanks must have corrosion protection under certain circumstances (VbF, Appendix II, 121.1(2)).	Verify that the interior walls of tanks have corrosion protection, if it is necessary given the nature of the material being stored. (1)(2)(4)(5)(7) (NOTE: Double-walled tanks are not subject to this requirement, nor are those that are located in containment areas.)
...	...
Portable Containers	
7-100. The walls of portable containers, whether of metal or not, must meet certain requirements (VbF, Appendix II, 143.2(1)).	Verify that the walls of portable containers, whether of metal or not, meet the following requirements: (1)(2)(4)(5)(7) - container walls are able to meet the mechanical, chemical, and thermal demands that can be expected to be placed on them - container walls are impervious to the combustible liquids they may contain and to vapors generated by those liquids - container walls are age-resistant and fireproof - container walls are so designed that they do not give rise to electrostatic charges.
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-101. Portable containers must be labelled with information on the dangers of the combustible liquids they contain (VbF, Appendix II, 143.2(2)).	Verify that portable containers are labelled with information on the dangers of the combustible liquids they contain. (1)(2)(4)(5)(7)
...	...
Operational Requirements	
7-102. The installation is required to meet certain educational requirements relevant to combustible liquids (VbF, Appendix II, 180.1(1)).	Verify that the installation presents the content of the applicable parts of the *Verordnung ueber brennbare Fluessigkeiten* in a comprehensible form to its employees. (1)(2)(4)(5)(7) Verify that information on the content of the applicable parts of the *Verordnung ueber brennbare Fluessigkeiten* is displayed in an appropriate place in the work areas. Verify that at least once a year the installation informs people who work with combustible liquids of the dangers that may arise in the course of storage, filling, or transferring those liquids. Verify that at least once a year the installation informs people who work with combustible liquids of measures for avoiding the dangers that may arise in the course of storage, filling, or transferring those liquids.
...	...
7-103. Prescribed safety equipment must be used, and it must be operated, inspected, and maintained such that it remains in working condition (VbF, Appendix II, 180.1(2)).	Verify that prescribed safety equipment is used, and that it is operated, inspected, and maintained such that it remains in working condition. (1)(2)(4)(5)(7)
...	...
7-104. Only certain persons may be employed in the maintenance, repair, and cleaning of the installations facilities (VbF, Appendix II, 180.1(4)).	Verify that the installation employs only those professionals in the construction, maintenance, repair, and cleaning of its facilities or parts of its facilities who have the equipment that is necessary to carry out the work safely. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Operational Requirements for Containers	
7-105. Containers must not be over-filled (VbF, Appendix II, 180.2(1)).	Verify that filling of containers is carried out in such a way that the containers are not over-filled. (1)(2)(4)(5)(7)
...	...
7-106. Filling of containers must be carried out in such a way that electrostatic charges are not produced (VbF, Appendix II, 180.2(2)).	Verify that filling of containers is carried out in such a way that electrostatic charges are not produced. (1)(2)(4)(5)(7)
...	...
7-107. Certain maximum overpressure limits must be observed when filling tanks that do not operate with interior pressure (VbF, Appendix II, 180.2(3)).	Verify that the overpressure does not exceed 0.1 bar when filling tanks that do not operate with interior pressure. (1)(2)(4)(5)(7) (NOTE: When tanks without interior pressure that have been given an overpressure rating of at least 2 bar are being filled, overpressures up to 0.5 bar are permissible.)
...	...
7-108. A gas displacement process must be used if air/vapor mixtures that occur in the course of filling cannot be conducted away safely (VbF, Appendix II, 180.2(5)).	Verify that a gas displacement process is used if air/vapor mixtures that occur in the course of filling cannot be conducted away safely. (1)(2)(4)(5)(7)
...	...
7-109. The permissible fill-level for containers must be calculated so that the containers do not overflow and overpressures that might compromise the liquid-tightness of the containers do not arise (VbF, Appendix II, 180.2(5)).	Verify that the permissible fill-level for containers is calculated so that the containers do not overflow and overpressures that might compromise the liquid-tightness of the containers do not arise. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-110. Only noncombustible gases or those that do not support combustion may be used as pressurants in the mixing or transfer of combustible liquids (VbF, Appendix II, 180.2(6)).	Verify that only noncombustible gases or those that do not support combustion are used as pressurants in the mixing or transfer of combustible liquids. (1)(2)(4)(5)(7) (NOTE: This restriction does not apply to the tanks of vacuum-pressure tank trucks.)
...	...
7-111. Containers that are taken out of service are to be secured in such way that they do not pose a danger to workers or to third parties (VbF, Appendix II, 180.2(7)).	Verify that containers that are taken out of service are secured in such way that they do not pose a danger to workers or to third parties. (1)(2)(4)(5)(7)
...	...
Additional Operational Requirements for Permanent Tanks	
7-112. Openings for manual gauging may be opened only for manual gauging or for the taking of samples (VbF, Appendix II, 180.3(1)).	Verify that openings for manual gauging are opened only for manual gauging or for the taking of samples. (1)(2)(4)(5)(7) (NOTE: Openings for manual gauging may not be opened while tanks are being filled.)
...	...
Additional Operational Requirements for Transport Containers	
7-113. Neither tanks nor parts of tanks may be used alternately for transporting gasoline or kerosine and then for transporting such liquids as can be pumped only after they have been warmed (VbF, Appendix II, 180.4(1)).	Verify that neither tanks nor parts of tanks are used alternately for transporting gasoline or kerosine and then for transporting such liquids as can be pumped only after they have been warmed. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-114. Liquids that may compromise safety equipment may not be transported in tanks or parts of tanks (VbF, Appendix II, 180.4(1)).	Verify that liquids that may compromise safety equipment are not transported in tanks or parts of tanks. (1)(2)(4)(5)(7)
...	...
Operational Requirements for Filling Stations	
7-115. Fuels may be dispensed at filling stations into suitable containers only (VbF, Appendix II, 180.5(1)).	Verify that fuels are dispensed at filling stations into suitable containers only. (1)(2)(4)(5)(7)
...	...
7-116. No smoking is permitted in work areas of filling stations (VbF, Appendix II, 180.5(2)).	Verify that no smoking takes place in work areas of filling stations. (1)(2)(4)(5)(7)
...	...
7-117. A motor vehicle may be filled with fuel only if the motor and external heating [Fremdheizung] are shut off (VbF, Appendix II, 180.5(3)).	Verify that motor vehicles are filled with fuel only if the motor and *Fremdheizung* are shut off. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
DIESEL FUEL AND FUEL OIL	
7-118. Equipment for transfering combustible liquids must be able to be shut down in an emergency from a location that can be reached quickly and without hindrance (VbF, Appendix II, 200.2).	Verify that equipment for transfering combustible liquids can be shut down in an emergency from a location that can be reached quickly and without hindrance. (1)(2)(4)(5)(7)
...	...
7-119. Facilities for the storage, filling, and transfer of combustible liquids must have adequate fire protection equipment (VbF, Appendix II, 200.3(1)).	Verify that facilities for the storage, filling, and transfer of combustible liquids have adequate fire protection equipment. (1)(2)(4)(5)(7)
...	...
7-120. Facilities for the storage, filling, or transfer of combustible liquids must have access routes for firefighters that are so laid out and labelled that locations where fires are likely to occur can be reached quickly and unhindered (VbF, Appendix II, 200.3(2)).	Verify that facilities for the storage, filling, or transfer of combustible liquids have access routes for firefighters that are so laid out and labelled that locations where fires are likely to occur can be reached quickly and unhindered. (1)(2)(4)(5)(7)
...	...
7-121. The connection between tanks and parts of facilities to which they are conductively connected must be arranged in such a way that no electrical currents can pass to them from the ground that could give rise to sparks that might cause ignition, to dangerous corrosion, or to endangerment of persons (VbF, Appendix II, 200.4).	Verify that the connection between tanks and parts of facilities to which they are conductively connected is arranged in such a way that no electrical currents can pass to them from the ground that could give rise to sparks that might cause ignition, to dangerous corrosion, or to endangerment of persons. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-122. Gasoline and kerosine may not be stored with EL fuel oil in a subdivided tank (VbF, Appendix II, 210.1(1)).	Verify that gasoline and kerosine are not stored together with EL fuel oil in a subdivided tank. (1)(2)(4)(5)(7)
...	...
7-123. Combustible liquids must be stored in containers from which they cannot escape, or they must be stored in such a way that escaping combustible liquids can be contained, identified, and disposed of (VbF, Appendix II, 210.1(2)).	Verify that combustible liquids are stored in containers from which they cannot escape, or are stored in such a way that escaping combustible liquids can be contained, identified, and disposed of. (1)(2)(4)(5)(7) (NOTE: This requirement does not apply to combustible liquids stored aboveground in very small quantities.)
...	...
7-124. Unauthorized persons may not enter storage areas, and an easily legible, readily visible sign must be present to indicate that fact (VbF, Appendix II, 210.1(5)).	Verify that unauthorized persons do not have access to storage areas. (1)(2)(4)(5)(7) Verify that an easily legible, readily visible sign is posted to indicate that access is forbidden to unauthorized persons.
...	...
7-125. The quantities of combustible liquids stored in storage rooms are to be consistent with the storage area's fire load (VbF, Appendix II, 210.2(1)).	Verify that the quantities of combustible liquids stored in storage rooms are consistent with the storage area's fire load. (1)(2)(4)(5)(7) (NOTE: "Fire load" is not defined.)
...	...
7-126. The walls, ceilings, and doors of storage rooms must at least be fire-resistant and must be built of noncombustible materials (VbF, Appendix II, 210.2(2)).	Verify that the walls, ceilings, and doors of storage rooms are at least fire-resistant and are built of noncombustible materials. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-127. Storage rooms must be separated from other rooms by fireproof walls (VbF, Appendix II, 210.2(3)).	Verify that storage rooms are separated from other rooms by fireproof walls. (1)(2)(4)(5)(7)
...	...
7-128. If gasoline or kerosine is stored outdoors together with diesel fuel or fuel oil in aboveground tanks, there must be sufficient distance between tanks to allow for effective firefighting (VbF, Appendix II, 210.3).	Verify, if gasoline or kerosine is stored outdoors together diesel fuel or fuel oil in aboveground tanks, that there is sufficient distance between tanks to allow for effective firefighting. (1)(2)(4)(5)(7)
...	...
7-129. The capacity of containment areas is to be sufficiently great that what is stored in the area cannot escape the containment area (VbF, Appendix II, 210.1(3)).	Verify that the capacity of containment areas is sufficiently great that what is stored in the area cannot escape the containment area. (1)(2)(4)(5)(7)
...	...
7-130. Containment areas must be built of nonflammable materials and must be sufficiently impermeable and leakproof (VbF, Appendix II, 210.1(4)).	Verify that containment areas are built of nonflammable materials and are sufficiently impermeable and leakproof. (1)(2)(4)(5)(7)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
RHEINLAND-PFALZ NOTIFICATION	
7-131. The lower-level water authority must be informed of plans to operate, shut-down, or modify the operation of facilities that handle or transfer substances harmful to water, or of the storage, filling, or transfer of such substances in the absence of full-fledged facilities (Landeswassergesetz, Section 20(1)).	Verify that the lower-level water authority has been informed of plans to operate, shut-down, or modify the operation of facilities that handle or transfer substances harmful to water, or of the storage, filling, or transfer of such substances in the absence of full-fledged facilities. (1)(2)(5) (NOTE: Aboveground storage tanks for gasoline, fuel oil, and diesel fuel with a capacity no greater than 1000 L that are not located in water protection areas or medicinal spring protection areas are not subject to this requirement.) (NOTE: The information communicated to the lower-level water authority must include the plans and supporting documents that are necessary to evaluate the undertaking.) (NOTE: If the plans are required by other regulations to be officially approved or to have a permit or a license, notification under this provision is not required.)
...	...
RHEINLAND-PFALZ PIPELINES	
7-132. Pipelines for substances harmful to water must meet certain requirements (Anlagenverordnung, Section 4).	Verify that one can easily and dependably be made aware that there are leaks in pipelines. (1)(2)(3)(4) Verify that one can easily check safety equipment to be sure it is functional. Verify that all pipelines are designed in such a way that they are protected against accidental damage.
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
RHEINLAND-PFALZ STORAGE/ DISPENSING AREAS	
7-133. Facilities for the *storage, filling, and treatment* of substances harmful to water, as well as public facilities where such substances are used, must meet state standards with regard to their design, construction materials, and corrosion protection (Anlagenverordnung, Section 3(1)).	Verify that facilities for the storage, filling, and treatment of substances harmful to water, as well as public facilities where such substances are used, meet state standards with regard to their design, construction materials, and corrosion protection. (3)(4)(9)(10)(11) (NOTE: These standards are specified in documents published in the *Minsterialblatt* by the Minister for Agriculture, Viticulture, and Forests, by the Minister for Social Affairs, Health, and Environment, and/or by the Finance Minister of the State of Rheinland-Pfalz. The documents were not available at the time this manual was written.)
...	...
7-134. The suitability of facilities that are not of a simple or traditional kind (see definitions) must be certified by the state (*Anlagenverordnung*, Section 5).	Verify, if the conditions of the definition are not met, that the facility has been certified by the state. (3)(4)(9)(10)(11) (NOTE: If only parts of facilities are not simple or traditional, the suitability of those parts only need be approved by the state.)
...	...
7-135. Areas where liquid substances that are harmful to water are regularly dispensed must be designed in such a way that none of the substance can enter a surface water, a wastewater facility, or the ground if a spill occurs (Anlagenverordnung, Section 14).	Verify that areas where liquid substances that are harmful to water are regularly dispensed are designed in such a way that none of the substance can enter a surface water, a wastewater facility, or the ground if a spill occurs. (3)(4)(9)(10)(11)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-136. Facilities for the storage of liquid substances harmful to water must always have a copy of the pamphlet *Betriebs- und Verhaltensvorschriften fuer das Lagern wassergefaehrdender fluessiger Stoffe* on hand near the facility, and the personnel that man the facility must be instructed in its contents (Anlagenverordnung, Section 16(2)).	Verify that facilities for the storage of liquid substances harmful to water always have a copy of the pamphlet *Betriebs- und Verhaltensvorschriften fuer das Lagern wassergefaehrdender fluessiger Stoffe* on hand near the facility. (3)(4)(9)(10)(11) Verify that the personnel that man the facility are instructed in the pamphlet's contents.
...	...
7-137. Certain facilities for the storage, filling, and treatment of substances harmful to water, as well as public facilities where such substances are used, must be inspected by specialists (Anlagenverordnung, Section 18(1)).	Verify that the following facilities are inspected by specialists: (3)(4)(9)(10)(11) - facilities with underground storage tanks - facilities with aboveground storage tanks with a capacity greater than 40,000 L - underground pipelines, even if they are part of a facility that need not itself be inspected - facilities that need to be certified for suitability. (NOTE: This does not apply to storage facilities for liquids that need to be heated before they can be pumped.)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
RHEINLAND-PFALZ ACCIDENTS/ SPILLS	
7-138. If a substance harmful to water is spilled or leaks in the course of handling, filling, transfer, transport, or while being stored, transferred, or transported without facilities, the lower-level water authority or the nearest police authority must be informed immediately, if the substance harmful to water enters or is likely to enter a water, a wastewater facility, or the ground (Landeswassergesetz, Section 20(7)).	Verify, if a substance harmful to water is spilled or leaks in the course of handling, filling, transfer, transport, or while being stored, transferred, or transported without facilities, and if the substance harmful to water enters or is likely to enter a water, a wastewater facility, or the ground, that the lower-level water authority or the nearest police authority is informed immediately of the leak or spill. (1)(2)(3)(4)(5)(6)
...	...
7-139. In the event of an accident or a disruption of operations, the operator of the facility must immediately halt operations and empty the facility, if waters cannot be protected in any other way (Anlagenverordnung, Section 9).	Verify, in the event of an accident or a disruption of operations, that the operator of the facility halts operations and empties the facility immediately, if waters cannot be protected in any other way. (1)(2)(3)(4)(5)(6)
...	...
7-140. Spilled fuel and lubricants must be disposed of in a way that does not harm the environment (Bauordnung, Section 45(7)).	Verify that spilled fuel and lubricants are disposed of in a way that does not harm the environment. (1)(2)(6)
...	...

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COMPLIANCE CATEGORY: POL MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
RHEINLAND-PFALZ FACILITIES IN PROTECTED AREAS	
7-141. Substances harmful to water may not be stored in the catchment areas or most highly restricted zones of protected areas (Anlagenverordnung, Section 15(1)).	Determine whether the installation's grounds encompass the catchment areas or most highly restricted zones of protected areas. (1)(2)(3)(4)(9)(10)(11) Verify that no substances harmful to water are stored in such areas.
...	...
7-142. Facilities and pipelines may be located in the less restricted zones of protected areas only if they are of a simple or traditional kind (Anlagenverordnung, Section 15(2)).	Verify that any facilities and pipelines located in the less restricted zones of protected areas are of a simple or traditional kind. (1)(2)(3)(4)(9)(10)(11) (NOTE: The capacity of underground storage tanks in protected areas may not exceed 40,000 L, and the capacity of aboveground storage tanks in such areas may not exceed 100,000 L.)
...	...
7-143. Facilities with aboveground storage tanks with a capacity of more than 1000 L that are located in protected areas must be inspected (Anlagenverordnung, Section 18(2)).	Verify that facilities with aboveground storage tanks with a capacity of more than 1000 L that are located in protected areas are inspected. (1)(2)(3)(4)(9)(10)(11) (NOTE: Facilities with aboveground storage tanks for EL fuel oil or diesel fuel that have a capacity of up to 5000 L do not need to be inspected.)

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Table 7-1

Classification of Substances Harmful to Water

(NOTE: The WGK designates the degree to which a substance is considered to be harmful to water. The scale runs from 0 to 3; substances in Class 3 are extremely harmful to water, those in Class 2 are considered harmful to water, substances in Class 1 are considered moderately harmful to water, and those in Class 0 are generally considered not harmful to water.)

Name	ID-Number	WGK
Acephat	677	2
Acetaldehyde	1	1
Acetamide	2	1
Acetanhydride	3	1
Acetic acid (>25%)	93	1
Acetic acid 2-ethoxyethyl ester	106	1
Acetic acid n-amyl ester	17	1
Acetic acid n-butyl ester	42	1
Acetic acid n-propyl ester	178	1
Acetic acid tert.-butyl ester	43	1
Acetic acid cyclohexyl ester	66	1
Acetic acid isobutyl ester	133	1
Acetic acid isopropyl ester	136	1
Acetic acid phenyl ester	171	2
Acetic acid vinyl ester	203	2
Acetoacetic ester	4	1
Acetoacetic methyl ester	5	1
Acetone	6	0
Acetone cyanhydrin	7	3
Acetonitrile	8	2
Acid sludge	333	3
Acrolein	9	2
Acrylic acid	11	1
Acrylic acid-2-ethylhexyl ester	13	1
Acrylic acid-n-butyl ester	12	1
Acrylic acid ethyl ester	208	2
Acrylic acid methyl ester	147	2
Acrylonitrile	10	3
Adipic acid	474	0
Adipic acid nitrile	209	1
Aldrin	464	3
sek.Alkan(C13-C17)sulfonates	663	2
Alcohol ether sulfates C12-C18.2-3 mol EO, sodium salts	665	2
Alcohol ethyl oxylates	670	2

Table 7-1 (continued)

Name	ID-Number	WGK
Alkyl benzol sulfonates (C10-C14), linear	449	2
Alkylbenzyl (C8-C18) dimethyl ammonium chloride	599	3
Alkylolamides	673	2
Allyl alcohol	444	2
Allylamine	14	2
Allyl ammonium chloride	525	2
Allyl chloride	15	2
N-allyl thiocarbamide	16	1
Aluminum chloride	507	1
Aluminum hydroxychloride	508	1
Aluminum nitrate	509	1
Aluminum phosphide	551	2
Aluminum sulfate	486	1
Ammonia	211	2
Ammonium arsenate	289	3
Ammonium chloride	213	1
Ammonium dichromate	290	3
Ammonium ferrous (II) sulfat	513	1
Ammonium fluoride	292	1
Ammonium hexafluorosilicate	544	2
Ammonium hydrogen fluoride	292	1
Ammonium hydrogen sulfate	293	1
Ammonium molybdate	637	1
Ammonium nitrate	212	1
Ammonium perchlorate	294	1
Ammonium picrate	295	2
Ammonium sulfate	296	1
Ammonium sulfide	297	2
Ammonium thiosulfate	193	1
n-amylalcohol	18	1
tert. amylalcohol	19	1
Aniline	20	2
Aniline hydrochloride	298	2
Anisole	21	2
Aqua regia	353	2
Arsenic acid	301	3
Arsenic pentoxide	300	3
Arsenic trioxide	299	3
Arsine	214	3
Atrazine	24	2
Azinphos-ethyl	627	3
Azinphos-methyl	628	3
Azocyclotine	534	3
Barium chlorate	302	2
Barium chloride	25	1

Table 7-1 (continued)

Name	ID-Number	WGK
Barium cyanide	303	3
Barium nitrate	304	1
Barium oxide	305	1
Barium perchlorate	306	1
Barium peroxide	307	1
Barium sulfate	307	1
Bentazon	711	2
Benzaldehyde	26	1
Benzene	29	3
Benzene sulfonyl chloride	215	1
Benzine	27	1
Benzoic acid	30	1
Benzonitrile	31	2
Benzotrichloride	32	1
Benzyl alcohol	216	1
Benzyl chloride	33	2
Beryllium nitrate	34	2
Bis-(tributyl tin)-tetrachlorophthalate	565	3
Bitumen	326	0
Boric acid	315	1
Bromophos	617	3
Bromophos ethyl	618	3
1,3-butadiene	218	2
n-butane	561	0
n-butanol	39	1
sec-butanol	40	1
tert-butanol	219	1
(2-butoxiethyl)acetate	592	1
Butoxypolyethylene/-propylene glycol	563	1
n-butyric acid	41	1
n-butylaldehyde	48	1
n-butylamine	44	1
n-butyl ammonium chloride	527	1
tert-butylbenzene	45	1
Butyl thiostannic oxide	578	1
Cadmium nitrate	49	3
Cadmium sulfate	564	3
Calcium arsenate	360	3
Calcium arsenite	316	3
Calcium carbonate	317	0
Calcium chlorate	318	2
Calcium chloride	220	0
Calcium cyanide	319	3
Calcium hydroxide	320	1
Calcium nitrate	321	1

Table 7-1 (continued)

Name	ID-Number	WGK
Calcium oxide	322	1
Calcium perchlorate	323	1
Calcium peroxide	324	1
Calcium sulfate	325	0
ε-caprolactam	221	1
Carbaryl	50	2
Carbon bi- or disulfide	183	2
Carbon dioxide	256	0
Carbon monoxide	257	0
Carbon tetrachloride	189	3
Carbonic acid	354	0
Catechol	536	2
Cetyl pyridinium chloride	601	3
Cetyl trimethyl ammonium bromide	600	3
Chlorine	223	2
4-chloro-2-nitro-aniline	706	2
4-chloro-3-methylphenol	231	2
2-chloro-6-trichloromethylpyridine	539	2
Chloral hydrate	51	2
Chloralkane (C10-C13)	649	3
Chloramine T	640	2
2-chloraniline	694	2
3-chloraniline	695	2
4-chloraniline	224	2
Chlorfenvinphos	631	3
Chlorhexidine	602	3
2-chlornitrobenzene	710	2
3-chlornitrobenzene	709	2
4-chlornitrobenzene	233	2
Chloroacetic acid	227	2
Chloroacetic methyl ester	228	2
Chlorobenzene	53	2
2-chlorobenzoic acid	225	2
4-chlorobenzoic acid	226	2
2-chloroethanol	229	3
Chloroform	54	3
Chlorohydrosilicons	557	1
1-chloronaphthalene	232	2
2-chlorophenol	234	2
Chlorosulfonic acid	236	2
Chlorpyrifos	622	3
Chlorthiophos	619	3
2-chlorotoluene	55	2
4-chlorotoluene	237	2
3-chlorpropionic acid	633	3

Table 7-1 (continued)

Name	ID-Number	WGK
Chromic-sulfuric acid mixture	327	3
Chromium trioxide (chromic acid)	328	3
Chromyl chloride	329	3
Citric acid	57	0
Cobalt (II) sulfate	521	2
Cobaltous chloride	493	2
Cobaltous nitrate	520	2
Copper arsenite (II)	355	3
Copper arsenite (II) acetate	356	3
Crotonaldehyde	239	3
Crude oils (easily liquefiable)	440	2
Crude oils (viscous and solid)	439	1
Cumene	58	1
Cumene hydroperoxide	59	2
Cupric chlorate (II)	357	2
Cupric chloride (II)	359	2
Cupric sulfate (II)	141	2
Cuprous chloride (I)	358	2
Cycloheptane	61	1
Cycloheptene	62	1
Cyclohexane	63	1
Cyclohexanol	240	1
Cyclohexanone	64	1
Cyclohexene	65	1
Cyclohexylamine	67	1
Cyclohexyl ammonium chloride	529	1
Cyclopentane	478	1
Cyclopentanol	68	1
Cyclopentanone	69	1
Cyfluthrin	678	3
Cyhexatin	451	3
Cypermethrin	679	3
p,p'-DDD	465	3
p,p'-DDE	466	3
p,p'DDT	70	3
n-decanol	71	1
Deltamethrine	680	3
Demeton-S-methyl	655	3
Demeton-S-methylsulphon [= Demeton-S-methyl sulfoxide?]	607	2
Di-n-butyl amine	593	1
Di-n-butyl ammonium chloride	610	1
Di-n-butyl ether	73	2
Diacetone alcohol	72	1
Dialifos [= Dialifor?]	629	3

Table 7-1 (continued)

Name	ID-Number	WGK
Dialkyl(C16-C18)dimethyl ammonium chloride	674	2
Diazinon	609	3
1,2-dibromomethane	241	3
2,3,-dibromopropyl alcohol-1	242	2
Dibutyl tin bis-(thioglycolic acid isooctyl ester)	530	2
Dibutyl tin dichloride	499	2
Dibutyl tin difluoride	528	2
Dibutyl tin dilaurate	526	2
Dibutyl tin maleinate	472	2
Dibutyl stannic oxide	445	2
2,3-dichloroaniline	696	3
2,4-dichloroaniline	697	3
2,5-dichloroaniline	698	3
2,6-dichloroaniline	699	3
3,4-dichloroaniline	700	3
1,2-dichlorobenzene	74	2
1,3-dichlorobenzene	641	2
1,4-dichlorobenzene	642	2
Dichloroacetic acid	243	1
1,2-dichloroethane	102	3
Dichloromethane	149	2
2,3-dichlorophenol	75	3
2,4-dichlorophenol	244	3
1,2-dichloropropane	446	3
2,3-dichloropropylene	246	3
1,3-dichloropropylene (cis and trans)	245	3
Dichlorvos	632	3
Dicyandiamide	247	1
Didodecyl tin bis-(thioglycolic acid isooctyl ester)	574	1
Didodecyl tin dichloride	572	1
Didodecyl stannic oxide	573	1
Dieldrin	467	3
Diesel fuel	76	2
Diethanolamine	77	1
Diethanol ammonium chloride	531	1
Diethyl amine		
Diethyl ammonium chloride	447	1
1,2-diethylbenzene	78	2
Diethylene glycol	79	0
Diethylene glycol mono-n-butyl ether	46	1
Diethylene glycol monoethyl ether	101	1
Diethyl ether	80	1
Diisobutyl ketone	591	1
Diisopropyl amine	614	2
Diisopropyl ammonium chloride	605	2

Table 7-1 (continued)

Name	ID-Number	WGK
Diisopropyl ether	598	1
Dimethoate	249	3
Dimethylamine	250	2
Dimethyl ammonium chloride	457	1
2,3-dimethylaniline	596	2
2,4-dimethylaniline	82	2
3,4-dimethylaniline	595	2
Dimethyl ether	714	1
Dimethyl formamide	83	1
2,2-dimethyl propane	463	0
Dimethyl tin bis-(thioglycolic acid isooctyl ester)	575	2
Disodium hydrogen phosphate	330	1
2,4-dinitroanilin	704	2
1,2-dinitrobenzene	708	3
1,3-dinitrobenzene	84	3
1,4-dinitrobenzene	707	3
2,4-dinitrotoluene	251	3
2,5-dinitrotoluene	645	3
2,4-dinitrotoluene	646	3
Dinoseb	85	2
Dioctyl tin bis-(thioglycolic acid isooctyl ester)	571	2
Dioctyl tin dichloride	569	2
Dioctyl stannic oxide	570	2
1,4-dioxane	86	2
Dipentene	87	1
Diphenyl ether	88	2
Diphenyl methane	89	2
Diphenyl methane diisocyanate	635	1
Disulfuric acid (Oleum)	331	2
Disulfoton	620	3
n-dodecylbenzene	90	1
n-dodecylhydrogen sulfate, sodium salt	91	1
Dodecyl stannic acid	584	1
EL fuel oil	119	2
α,β-endosulfan	468	3
Endrin	469	3
EO/PO addition compounds of fatty alcohol	672	2
Epichlorohydrin	92	3
Ester tin	587	2
Ethanol	96	0
Ethanolamine	94	1
Ethanol ammonium chloride	533	1
Ethephon	689	2
Ethoprophos	680	3
Ethyl n-amyl ketone	98	1

Table 7-1 (continued)

Name	ID-Number	WGK
Ethylamine	97	1
Ethyl ammonium chloride	558	1
n-ethylaniline	252	2
Ethyl benzene	99	1
Ethyl butyrate	100	1
Ethylenediamine	103	2
Ethylenediamine hydrochloride	535	2
Ethylenediamine tetra-acetic acid and Sodium salts	104	2
Ethylene glycol	105	0
Ethylene glycol mono-n-butyl ether		
Ethylene glycol monomethyl ether	107	1
Ethyleneimine	108	3
Ethylene oxide	253	2
2-ethylhexanol-1	134	2
2-ethylhexylamine-1	109	2
2-ethylhexyl ammonium chloride	537	2
Ethyl polysilicate	488	1
Fatty acids of tall oil	692	2
Fatty acids that are saturated and have linear carbon chains and that have an even numbered carbon chain, a number of carbons greater than or equal to 14, and a final carboxyl group	657	1
Fatty acids that are unsaturated and have linear carbon chains and that have an even numbered carbon chain, a number of carbons between 16 and 18, and a final carboxyl group	659	1
Fatty alcohol esters/Fatty acid esters saturated and unsaturated that have an even number of linear carbon chains, where the number of carbons in the Alkohol- und Fettsaeurerestes is is greater than or equal to twelve, and that have a final carboxyl- or OH-group of Fettsaeure- und Alkohol-rest	672	2

Table 7-1 (continued)

Name	ID-Number	WGK
Fatty alcohols saturated with an even-numbered carbon chain, a number of carbons greater than or or equal to 12, and a final OH-group	658	0
Fenbutatin oxide	532	3
Fenpropathrin	681	3
Fenthion	616	3
Fenvalerat	682	3
Fluoroacetic acid	162	2
Formaldehyde	112	2
Formic acid	210	1
Fuel oil, heavy	443	1
Furfural	113	2
Furfuryl alcohol	114	1
Gasolines	204	2
Glutaraldehyde	712	2
Glycerin	116	0
Glycerin diester	691	0
Glycerin monoester	690	1
Glycolic acid n-butyl ester	117	1
n-heptane	120	1
n-heptanol-1	121	1
n-heptene-1	122	1
Heptenophos	651	3
Hexachlorobenzene	470	3
Hexachlorobutadiene	123	3
Hexafluorosilicic acid	491	2
n-hexane	124	1
n-hexanol-1	125	1
n-hexanol-2	126	1
n-hexanol-3	127	1
Hydrazine	130	3
Hydrogen bromide	217	1
Hydrogen chloride	238	1
Hydrogen cyanide	309	3
Hydrogen fluoride	254	1
Hydrogen iodide	332	1
Hydrogen peroxide	288	0
Hydrogen phosphide	277	2
Hydrogen selenide	284	3
Hydrogen sulfide	283	2
Hydroquinone	128	2
Hydroquinone monomethyl ether	129	1
Imidazole salt	675	2
Iodine	492	1

Table 7-1 (continued)

Name	ID-Number	WGK
Iron (II) chloride	524	1
Iron (II) sulfate	514	1
Iron (III) chloride	515	1
Iron (III) nitrate	516	1
Isoamyl alcohol	597	1
Isobutane	562	0
Isobutyl alcohol	131	1
Isobutyric acid nitrile	132	2
Isofenphos	683	3
Isopentane	648	1
Isopropyl alcohol	135	1
Jet fuels	139	2
Lead (II) acetate	36	2
Lead (II) arsenate	310	3
Lead (II) arsenite	311	3
Lead (II) cyanide	312	3
Lead (II) nitrate	313	2
Lead (II) perchlorate	314	2
Lead tetraethyl	35	3
Lead tetramethyl	538	3
Lignite tar	496	3
Lindan	143	3
Linuron	258	2
Lubricating oils (Grundoele, unlegierte[?])	435	1
Lubricating oils (legierte, soluble)	437	3
Lubricating oils (legierte, insoluble)	436	2
Magnesium arsenate	361	3
Magnesium chlorate	362	2
Magnesium chloride	259	0
Magnesium hexafluorosilicate	518	2
Magnesium nitrate	363	1
Magnesium perchlorate	364	1
Magnesium peroxide	365	0
Magnesium phosphide	552	2
Magnesium sulfate	366	0
Malathion	615	3
Maleic acid	260	1
Maleic anhydride	261	1
Manganous chloride (II)	494	1
Manganous sulfate (II)	522	1
m-cresol	140	2
Mercaptane	144	3
Mercury	393	3
Mercuric acetate	394	3
Mercuric arsenate	395	3

Table 7-1 (continued)

Name	ID-Number	WGK
Mercuric benzoate	396	3
Mercuric bromide	398	3
Mercuric chloride	180	3
Mercuric cyanide	400	3
Mercuric diamminchloride	401	3
Mercuric disulfate	402	3
Mercuric gluconate	403	3
Mercuric iodide	404	3
Mercuric nitrate	406	3
Mercuric oleate	407	3
Mercuric oxide	408	3
Mercuric oxide cyanide	409	3
Mercuric salicylate	410	3
Mercuric sulfate	412	3
Mercuric thiocyanate	413	3
Mercurous bromide	397	3
Mercurous chloride	399	3
Mercurous nitrate	405	3
Mercurous sulfate	411	3
Mesityl oxide	262	1
Methacrylic acid methyl ester	154	1
Methamidophos	688	3
Methanol	145	1
Methidathion	653	3
2-methyl-4-nitroaniline	705	2
Methyl acetate	146	1
Methyl amine	263	2
Methyl ammonium chloride	459	1
2-methylaniline	195	2
3-methylaniline	453	2
4-methylaniline	693	2
Methyl bromide	264	3
Methyl chloride	265	2
2-methyl cyclohexanone	148	1
α-methyl ester sulfonates C12-C18, sodium salt	668	2
Methyl ethyl ketone	150	1
2-methylfuran	151	1
Methyl isoamyl ketone	152	1
Methyl isobutyl ketone	137	1
Methyl isothiocyanate	266	3
Methyl mercaptan	267	3
Methyl propyl ketone	590	1

Table 7-1 (continued)

Name	ID-Number	WGK
Mevinphos	633	3
Monobutyl tin trichloride	579	1
Monobuytl tin tris-(thioglycolic acid isooctyl ester)	580	1
Monododecyl tin trichloride	585	
Monododecyl tin tris-(thioglycolic acid isooctyl ester)	586	1
Monolinuron	157	2
Monomethyl tin tris-(thioglycolic acid isooctyl ester)	576	2
Monooctyl tin trichloride	582	1
Monooctyl tin tris-(thioglycolic acid isooctyl ester)	583	1
Morpholine	158	2
Naphthalene	269	2
Nickel (II) chloride	159	2
Nickel (II) nitrate	387	2
Nickel (II) nitrite	388	2
Nitrating acid	389	2
Nitric acid (Other than fuming)	414	1
Nitric acid (Fuming)	415	2
Nitrilotriacetic acid and sodium salts	160	1
2-nitroaniline	702	2
3-nitroaniline	703	2
4-nitroaniline	162	2
2-nitroanisol	647	2
Nitrobenzene	163	2
Nitroethane	588	2
Nitrogen dioxide & monoxide	285	1
Nitromethane	589	2
Nitrosyl chloride	271	2
2-nitrotoluene	164	2
3-nitrotoluene	643	2
4-nitrotoluene	644	2
4-nonyl phenol (mixture of branched isomers)	272	2
Nonyl phenol ethoxylate	671	2
n-octane	479	1
n-octanol-1	165	1
n-octene-1	480	1
Octyl stannic acid	581	1
α-olefin sulfonate C14-C18	666	2
Omethoat [= omethioate = folimat?]	273	3
Oxalic acid	166	1
Oxalic acid diethyl ester	81	1
Oxidemeton-methyl	608	3
Parafins (Waxes)	268	0
Parathion ethyl	167	3
Parathion methyl	274	3
Pentachlorophenol	275	3

Table 7-1 (continued)

Name	ID-Number	WGK
Pentaerythrite	276	1
n-pentane	452	1
2,4-pentandion	168	1
Perchloric acid	390	1
Permethrin	683	3
Petroleum (130/290)	442	1
Petroleum coke	433	0
Petroleum-based naphtha (180/210)	441	1
Phenol	170	2
Phosalon	630	3
Phosphamidon	652	3
Phosphor anhydride	391	1
Phosphoric acid	392	1
Phosphoric acid tri-n-butyl ester	196	2
Phosphoric acid triethyl ester	456	1
Phoxim	686	3
Phthalic acid	481	0
Phthalic acid benzyl-n-butyl ester	278	2
Phthalic acid diallyl ester	173	2
Phthalic acid diethyl ester	174	2
Picric acid	175	2
Pirimphos-methyl	676	3
Polyaldehydocarbon acids and sodium salts	639	1
Polychlorinated bi- and terphenyls	471	3
Polychlorinated naphthalenes	523	3
Polyethylene glycols	279	0
Polymer dispersions [NOTE: This classification is of limited validity only, a fact which the revision of the Catalogue will take into account.]	662	1
Potassium aluminate	510	1
Potassium antimonate	22	1
Potassium antimonyl tartrate	334	2
Potassium arsenate	335	3
Potassium arsenite	336	3
Potassium carbonate	337	1
Potassium chlorate	52	2
Potassium chloride	230	0
Potassium cyanide	338	3
Potassium dichromate	339	3
Potassium fluoracetate	340	2

Table 7-1 (continued)

Name	ID-Number	WGK
Potassium fluoride	341	1
Potassium hexacyanoferrate (II)	489	1
Potassium hexacyanoferrate (III)	490	1
Potassium hexafluorosilicate	517	2
Potassium hydrogen fluoride	342	1
Potassium hydrogen sulfate	343	1
Potassium hydrogen sulfide	344	2
Potassium hydroxide	345	1
Potassium nitrate	346	1
Potassium nitrite	347	2
Potassium oxide	348	1
Potassium perchlorate	169	1
Potassium peroxide	349	1
Potassium sulfate	255	0
Potassium sulfide	350	2
Potassium tetracyanomercurate (II)	351	3
Potassium tetraiodomercurate (II)	352	3
Prometon	613	2
Propane	560	0
Propargyl alcohol	177	2
Propionic acid	483	1
Propionic acid ethyl ester	110	1
Propionic acid methyl ester	153	1
n-propyl alcohol	176	1
1,2-propylene glycol	280	0
Pyrazophos	624	3
Pyridine	179	2
Salicylaldehyde	181	2
Salicylic acid	281	1
Selenic acid	420	2
Selenium dioxide		
Silanes (solid and liquid)	566	1
Silane (gaseous)	567	0
Silanols	568	1
Silicone A	542	1
Silicone B	543	1
Silver arsenite	421	3
Silver nitrate	185	3
Simazin	603	2
Soap	669	2
Sodium acetate	367	1
Sodium adipate	475	0
Sodium alkyl(C8-C20) sulfates	664	2
Sodium arsenate	23	3
Sodium arsenite	368	3

Table 7-1 (continued)

Name	ID-Number	WGK
Sodium azide	636	2
Sodium bromide	38	1
Sodium carbonate	222	1
Sodium chloroacetate	369	2
Sodium chlorate	370	2
Sodium chloride	270	0
Sodium chlorite	487	2
Sodium cyanide	60	3
Sodium dichromate	56	3
Sodium dihydrogen phosphate	371	1
Sodium fluoroacetate	372	2
Sodium fluoride	111	1
Sodium formiate [=sodium formate?]	373	1
Sodium hexafluorosilicate	519	2
Sodium hydrogen carbonate	374	0
Sodium hydrogen fluoride	375	1
Sodium hydrogen sulfate	376	1
Sodium hydrogen sulfide	377	2
Sodium hydroxide	142	1
Sodium iodide	138	1
Sodium molybdate	638	1
Sodium monoxide	380	1
Sodium nitrate	378	1
Sodium nitrite	161	2
Sodium oxalate	379	1
Sodium pentachlorophenate	381	3
Sodium perchlorate	382	1
Sodium peroxide	383	1
Sodium phenate	384	2
Sodium phthalate	482	0
Sodium propionate	484	1
Sodium selenate	385	2
Sodium selenite	184	2
Sodium succinate	477	0
Sodium sulfate	286	0
Sodium sulfide	188	2
Sodium sulfite	282	1
Sodium tetraborate	37	1
Sodium thiosulfate	386	0
Styrene	187	2
Succinic acid	476	0
Sulfosuccinic acid ester, sodium salt	667	2
Sulfotepp	687	3
Sulfur dioxide	416	1
Sulfur trioxide	417	2

Table 7-1 (continued)

Name	ID-Number	WGK
Sulfuric acid	182	1
Sulfurous acid	418	1
Tall oil	497	2
Terbufos	621	3
Terbutryn	612	2
Terbutylazin	604	2
Tetrabutyltin	498	3
Tetrachloroethylene	287	3
Tetraethyl silicate	450	
Tetrahydrofuran	190	1
1,2,4,5-tetramethyl benzene	191	1
Tetraoctyltin	554	2
Tetraphenyltin	553	2
Thallium chlorate	422	2
Thallium (I) nitrate	192	2
Thallium (III) nitrate	423	2
Thallium sulfate	555	2
Thiabendazol	713	2
Thioglycolic acid	485	1
Tolclofos-methyl	685	3
Toluene	194	2
Toluene 2,4-diisocyanate	511	2
Toluene 2,6-diisocyanate	512	2
Tri-n-butyl amine	594	2
Tri-n-butyl ammonium chloride	611	2
Triazophos	625	3
Tributyl tin acetate	500	3
Tributyl tin aphthenate	548	3
Tributyl tin benzoate	546	3
Tributyl tin chloride	501	3
Tributyl tin fluoride	545	3
Tributyl tin linoleate	549	3
Tributyl tin oleate	550	3
Tributyl tin oxide	502	3
Tributyl tin phosphate	547	3
2,4,6-trichloroaniline	701	3
1,2,4-trichlorobenzene	454	3
Trichloroacetic acid	197	1
1,1,1-trichloroethane	198	3
Trichloroethane	199	3
Triethylamine	556	1
Trichlorofluoromethane	448	2
Trichlorfon	634	3
2,4,5-trichlorophenol	455	3
2,4,5-trichlorophenoxyacetic acid	200	3

Table 7-1 (continued)

Name	ID-Number	WGK
1,1,2-trichlorotrifluoroehtane		
Triethanolamine	201	1
Triethanol ammonium chloride	559	1
Trithethylene glycol	202	0
2,4,6-trmercaptotriazin	540	2
2,4,6-trimercaptotriazin, trisodium salt	541	2
Trimethylamine	460	2
Trimethyl ammonium chloride	461	1
Trisodium phosphate	172	1
Triphenyl tin acetate	503	3
Triphenyl tin chloride	504	3
Triphenyl tin fluoride	505	3
Triphenyl tin hydroxide	506	3
Urea	118	1
Vanadium pentoxide	654	2
Vinyl chloride	462	2
Waste oils	438	3
White oils (according to DAB)	434	0
Xylene (all isomers)	206	2
Zinc ammonium nitrate	424	1
Zinc arsenate	425	3
Zinc arsenite	426	3
Zinc chlorate	427	2
Zinc chloride	207	1
Zinc cyanide	428	3
Zinc nitrate	429	1
Zinc peroxide	430	1
Zinc phosphide	431	2
Zinc sulfate	432	1
Zinc (II) chloride	495	1

Table 7-2

Combustible Liquid Storage Facilities that Require a Permit (VbF, Section 9)

1. The storage facilities listed in the following table require a permit.

Location	Type of Container	Quantity Stored (in Liters) AI over...up to	Quantity Stored (in Liters) AII or B over...up to
Storage Rooms Above or Belowground	Breakable Containers	60/200	200/1000
	Other Containers	450/1000	3000/5000
Outdoor Storage Areas for Aboveground Containers	Breakable Containers	N/A	25/100
	Other Containers	450/1000	3000/5000
Storage Areas for Underground Tanks Covered by less than 0.8 m of soil	N/A	0/1000	0/5000
Storage Areas for Underground Tanks Covered by at least 0.8 m of soil	N/A	0/10,000	0/30,000

2. Filling stations in enclosed areas in which a total of more than 1000 L of combustible liquids of Dangerous-Materials Classes AI, AII, or B can be drawn off require a permit.

3. Filling stations for combustible liquids of Dangerous-Materials Class AIII that are in the same enclosed area with filling stations in enclosed areas in which a total of more than 1000 L of combustible liquids of Dangerous-Materials Classes AI, AII, or B can be drawn off require a permit.

4. Outdoor filling stations for combustible liquids of Classes AI, AII, or B and outdoor filling stations for combustible liquids of Class AIII that are connected to filling stations for combustible liquids of Classes AI, AII, or B require a permit.

5. Tank stations require a permit, except those that either store or dispense combustible liquids of Class AIII exclusively.

6. Pipelines for combustible liquids that extend beyond the installation's grounds and connect facilities that are in close spatial and operational relationship to one another require a permit.

7. Long-distance pipelines require a permit.

8. Permanent airfield tanking facilities, including their pipelines and hydrant facilities, require a permit.

Table 7-2 (continued)

(NOTE: If combustible liquids of Classes AII or B are stored together with combustible liquids of Class AI, 5 L of an AII or B liquid are considered equivalent to 1 L of AI liquid for the purposes of figuring totals in the above table. The relevant number of liters for AII or B liquids are then to be added to the number of liters of AI liquids in order to arrive at a total.)

(NOTE: Only one-fifth of the quantities listed in the above table are used when determining whether or not to report the storage of Class AI combustible liquids whose flashpoints are lower than 125 ^{o}C.)

INSTALLATION:	COMPLIANCE CATEGORY: POL MANAGEMENT German	DATE:	REVIEWER(S):

STATUS NA C RMA	REVIEWER COMMENTS:

(1) BEC (Base Environmental Coordinator) (2) BCE (Base Civil Engineer) (3) BPMO (Base Fuels Management Office) (4) LFM (Liquid Fuels Maintenance) (5) BEE (Base Bioenvironmental Engineer) (6) Base Fire Department (7) Base Contracting Office (8) Power Production (9) AAFES (Army/Air Force Exchange Service) Service Station Manager (10) Generating Activities (11) Vehicle Maintenance Shop

Section 8

Solid Waste Management

Section 8

SOLID WASTE MANAGEMENT

A. Applicability

In the course of carrying out their missions on German soil, all installations will of necessity produce solid waste. This section of the manual therefore applies to all installations.

B. National Laws and Regulations

The laws of the Federal Republic of Germany that have to do with the management of solid waste are not many, but the few there are have an extraordinarily broad scope. The general principles of waste management as they flow from the various Federal acts will be reviewed in what follows.

- The **Gesetz ueber die Vermeidung und Entsorgung von Abfaellen (Abfallgesetz -- AbfG)** (Act on the Reduction and Management of Wastes (Waste Act)) treats solid waste in general. The act articulates the twin principles that the production of solid waste is to be avoided and that what is produced is to be recycled if technically and economically feasible. Wastes are to be collected, transported, treated, and stored in such a way that all possibilities for recycling can be exploited. What cannot be recycled is to be disposed of in such a way that
  - people's health is not endangered and their well-being is not diminished
  - useful animals, birds, wild animals, and fish are not endangered
  - water, soil, and useful plants are not adversely effected
  - air pollution and noise do not have adverse effects on the environment
  - the concerns of nature protection, protection of the countryside, and city planning are addressed
  - the public safety is not endangered or disturbed in other ways.

The Waste Act draws an distinction between *waste* (which is destined to be disposed of) and *residual material* (which is destined to be recycled). This distinction based on ultimate disposition is accompanied by the general principle that the provisions of the Waste Act apply also to so-called residual materials until such time as the material or energy that is recovered from them re-enters economic circulation.

The Federal Waste Act gives a large part of the responsibility for regulating the management of solid waste to the states. It is the states, for example, who are charged with drawing up waste management plans that they may then declare binding in whole or in part. The Federal Waste Act also allows the authorities competent under state law to exclude those solid wastes from disposal that, given their kind or amount, cannot be disposed of with solid wastes that accumulate in households. (See Part C (below) for a discussion of these matters as they relate to the management of waste in Rheinland-Pfalz.)

The states in turn task the counties or other smaller units of government with waste management. Those units of government may themselves take care of that responsibility, or they may hire private firms to do it for them. If both methods of waste management happen to be available to a given installation, it is left up to the given installation to work with the county to determine which means of management works most effectively, given the needs of the installation and the requirements of German law.

- The **Verordnung ueber Betriebsbeauftragte fuer Abfaelle** mandates the appointment of person(s) designated responsible for waste in a number of kinds of facilities, but our clinics and hospitals are the only ones to whom it is applicable.

  Other Federal legislation may occasionally contain provisions relevant to the management of solid wastes.

- The **Bundesimmissionschutzgesetz (BImSchG)** (Federal Immission Control Act) contains provisions on the proper handling of waste/residual materials after the shutdown of certain kinds of facilities.

- The **Gesetz ueber die Umweltvertraeglichkeitspruefung (UVPG)** (Environmental Impact Statement Act) requires that environmental impact studies be done prior to the construction of or substantial modification to certain types of facilities under certain conditions. U.S. forces in Germany are permitted to substitute an environmental review for full-blown environmental impact statements.

- The **Gesetz zur Ordnung des Wasserhaushalts (Wasserhaushaltsgesetz -- WHG)** (Water Resources Management Act (Water Resources Act) establishes a class of substances that are considered to be harmful to water. Waste or residual substances that are or contain substances harmful to water require special treatment under the WHG. These substances are covered in Section 7 (*POL Management*) of this manual.

C. State Laws and Regulations -- Rheinland-Pfalz

- The **Landesgesetz zur Ausfuehrung des Gesetzes ueber die Vermeidung und Entsorgung von Abfaellen (Landesabfallgesetz -- LAbfG)** (State Act Implementing the Act on the Reduction and Management of Wastes (State Waste Act)) contains provisions that implement the Federal AbfG. In addition, the State Waste Act for Rheinland-Pfalz does define in this act a class of so-called "special waste" (Sonderabfaelle) that, given what type it is and/or how much of it there is, can be excluded from the ordinary management process. The State Minister for Environment and Health is charged with establishing technical guidelines that relate to when such waste is to receive special handling before it is deposited with the parties charged with managing it. The parties charged with managing special waste are named in a State Waste Management Plan. Neither the technical guidelines issued by the State Minister for Environment and Health nor the State Waste Management Plan could be taken into account here.

  No other state legislation relevant to the management of solid waste was discovered.

D. Key Compliance Definitions

- *Competent Authority* - State governments or the agencies named by them determine who the competent authorities are, unless state law has already done so (AbfG, Section 19). In **Rheinland-Pfalz**, the highest-level authority competent for waste is the Ministry for Environment and Health. The higher-level authority competent for waste is the district administration (Bezirksregierung). The lower-level authority competent for waste is the county council (Kreisverwaltung), as the lower-level authority of state administration. In cities that do not belong to administrative districts (kreisfreie Staedte), however, the city administration is the lower-level authority competent for waste. For the purposes of the Federal Waste Act, the competent authority is the district administration (Bezirksregierung) (LAbfG, Sections 13(1) and 13(2)).

- *Special Waste* **(Rheinland-Pfalz only)** - waste that is formally excluded from the ordinary management process because of what kind it is or how much of it there is (LAbfG, Section 3(1)).

- *Waste* - moveable goods or personal property that the installation wants to get rid of or the proper disposal of which is necessary for the preservation of the common good and the environment in particular. Moveable goods or personal property that the installation hands over to the entity responsible for its disposal is considered waste (even in the event of recycling) until such time as it or the energy obtained from it is reintroduced into economic circulation (AbfG, Section 1(1)). (NOTE: Junked cars are considered waste.)

- *Waste Management* - includes waste recycling and the depositing of wastes, as well as the collection, transport, handling, and storage that are necessary to those activities (AbfG, Section 1(2)).

- *Waste Management Facilities* - facilities or installations licensed for the treatment, storage, and deposit of waste (AbfG, Section 4(1)). These are generally always commercial or county-run firms.

- *Waste Recycling* - the recovery of materials or energy from waste (AbfG, Section 1(2)).

SOLID WASTE MANAGEMENT

GUIDANCE FOR CHECKLIST USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(*)
All Installations	8-1 through 8-7	(1)(2)(3)
Hospitals/Clinics	8-8 through 8-11	(1)(3)
Permitted Facilities	8-12 and 8-13	(1)(2)
Rheinland-Pfalz Solid Waste	8-14 through 8-17	(1)(2)

(*)CONTACT/LOCATION CODE:

(1) BEC (Base Environmental Coordinator)
(2) BCE (Base Civil Engineer)
(3) BEE (Bioenvironmental Engineering)

SOLID WASTE MANAGEMENT

Records to Review

- Record of current nonhazardous solid waste management practices
- Documentation of locations (map) and descriptions of all nonhazardous waste treatment, storage, and disposal facilities (TSDFs)
- Records of operational history of all active and inactive TSDFs
- Environmental monitoring procedures or plans
- Records of resource recovery practices, including the sale of materials for the purpose of recycling
- Solid waste removal contracts and inspection records

Physical Features to Inspect

- Resource recovery facilities
- Incineration and land disposal facilities (active and inactive)
- Areas where hazardous and nonhazardous wastes are disposed of
- Construction debris areas
- Waste receptacles
- Solid waste vehicle storage and washing areas

Sources to Interview

- BEC (Base Environmental Coordinator)
- BCE (Base Civil Engineer)
- BEE (Bioenvironmental Engineering)

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL INSTALLATIONS	
8-1. Determine actions or changes since previous review of solid waste management (GMP).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report. (2)
...	...
8-2. Installations should maintain a file of German laws and regulations that pertain to waste management (GMP).	Verify that copies of the following federal laws and regulations are kept at the installation: (1)(2) - *Gesetz ueber die Vermeidung und Entsorgung von Abfaellen (Abfallgesetz -- AbfG)* - *Gesetz ueber die Umweltvertraeglichkeitspruefung (UVPG)* - *Verordnung ueber Betriebsbeauftragte fuer Abfaelle.* Verify that copies of the following state laws and regulations for Rheinland-Pfalz are kept at the installation if appropriate: - *Landesgesetz zur Ausfuehrung des Gesetzes ueber die Vermeidung und Entsorgung von Abfaellen (Landesabfallgesetz -- LAbfG).*
...	...
8-3. If both commercial and county-run waste management operations are available to the installation, the installation should work with the county to determine which management method will best meet its needs and the requirements of German law (GMP).	Determine if both commercial and county-run waste management operations are available to the installation. (1)(3) Verify that the installation has worked with the county to determine which management method will best meet its needs and the requirements of German law.
...	...
8-4. The production of waste is to be avoided, and whatever waste is produced is to be recycled if technically and economically feasible (AbfG, Section 1a).	Verify that the installation has a waste minimization program in place. (1)(3) Verify that whatever waste is produced is being recycled if it is technically and economically feasible to do so.
...	...

(1) BEC (Base Environmental Coordinator) (2) BCE (Base Civil Engineer) (3) BEE (Bioenvironmental Engineering)

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-5. Waste that cannot be recycled is to be disposed of in a way that takes into account certain specific concerns (AbfG, Section 2(1)).	Verify that waste that cannot be recycled is being disposed of in such a way that: (1)(2)(3) - people's health is not endangered and their well-being is not diminished - useful animals, birds, wild animals, and fish are not endangered - water, soil, and useful plants are not adversely affected - air pollution and noise do not have adverse effects on the environment - the concerns of nature protection, protection of the countryside, and city planning are addressed - public safety is not endangered or disturbed in other ways.
...	...
8-6. An environmental review must be filed prior to construction of or substantial modification to certain facilities (UVPG, Section 3(1)).	Verify that an environmental review is filed prior to the construction of or substantial modification to waste disposal facilities and facilities for the utilization or treatment of waste. (1)(2) (NOTE: Substantial modification to the way such facilities are operated also requires that an environmental review be conducted.)
...	...
8-7. Waste may be handed over for treatment, storage, or deposit only to facilities that are properly approved under German law (AbfG, Section 4(1)).	Verify that waste is handed over for treatment, storage, or deposit only to facilities that are properly approved under German law. (1)(2)
...	...
HOSPITALS/CLINICS	
8-8. A person designated responsible for waste must be appointed for clinics and hospitals (Verordnung ueber Betriebsbeauftragte fuer Abfall, Section 1 (3)(7)).	Verify that a person designated responsible for waste has been appointed for the installation's clinics and/or hospitals. (1)(3)
...	...
8-9. Persons designated responsible for waste must be appointed in writing and the competent authority must be informed of the name(s) of the person(s) appointed (AbfG, Section 11a(1) and 11c(1)).	Verify that one or several persons designated responsible for waste have been appointed in writing, and that the competent authority has been informed of the name(s) of that person(s). (1)(3)

(1) BEC (Base Environmental Coordinator) (2) BCE (Base Civil Engineer) (3) BEE (Bioenvironmental Engineering)

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-10. The person designated responsible for waste must carry out certain activities (AbfG, Section 11b(2)).	Verify that the person designated responsible for waste works toward the following goals for the hospital or clinic: (1)(3) - development and implementation of environmentally friendly processes for reducing waste - the proper, harmless recycling of the residual materials produced as a result of the operation of the facility - if such recycling is not possible or feasible, to work toward the proper disposal of these residual materials as waste.
...	...
8-11. The person designated responsible for waste is to report to the owner/operator of the facility yearly on measures taken and on measures that are planned (AbfG, Section 11b(3)).	Verify that the person designated responsible for waste makes annual reports on measures taken and on measures that are planned. (1)(3)
...	...
PERMITTED FACILITIES	
8-12. Facilities that are listed in Table 1-1 (*Air Emissions Management*) must minimize the production of waste by employing processes that reduce the production of residual materials or by proper recycling of the residual materials they produce (AbfG 1a(1), BImSchG 5(1)(3)).	Determine if the facility is listed in Table 1-1 (*Air Emissions Management*). (1)(2) Verify that waste minimization and/or recycling programs are in place.
...	...
8-13. In the event that a facility listed in Table 1-1 (*Air Emissions Management*) is shut down, any residual materials that are still on hand must be properly recycled or disposed of as waste in a way that does not harm the common good (BImSchG, Section 5(3)(2)).	Verify, in the event that a facility listed in Table 1-1 (*Air Emissions Management*) is shut down, that any residual materials still on hand are properly recycled or disposed of as waste in a way that does not harm the common good. (1)(2)
...	...

(1) BEC (Base Environmental Coordinator) (2) BCE (Base Civil Engineer) (3) BEE (Bioenvironmental Engineering)

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
RHEINLAND-PFALZ SOLID WASTE	
8-14. Installations with recyclable waste must turn it over to the party responsible for management of it in such a way that recycling is made easier (LAbfG, Section 2(2)).	Verify that recyclable waste is turned over to the party responsible for management of it in such a way that recycling is made easier. (1)(2)
...	...
8-15. Installations with special waste are to turn it over to the party responsible for managing it in accordance with the provisions of the State Waste Management Plan (LAbfG, Section 3(2)).	Verify that special waste is turned over to the party responsible for managing it in accordance with the provisions of the State Waste Management Plan. (1)(2)
...	...
8-16. A permit issued by the competent authority is required by anyone who brings waste that was generated outside the area covered by a binding waste management plan into the area covered by it and by anyone who brings waste to a waste management facility other than the facility specified in the waste management plan (LAbfG, Section 6(1)).	Verify that anyone who brings waste that was generated outside the area covered by a binding waste management plan into the area covered by it has a permit from the competent authority. (1)(2) Verify that anyone who brings waste to a waste management facility other than the facility specified in the waste management plan has a permit from the competent authority.
...	...
8-17. Toxic waste, special waste, and other waste that requires special handling are to be kept separate from other waste (LAbfG, Section 17).	Verify that toxic waste, special waste, and other waste that requires special handling are kept separate from other waste. (1)(2)

(1) BEC (Base Environmental Coordinator) (2) BCE (Base Civil Engineer) (3) BEE (Bioenvironmental Engineering)

INSTALLATION:	COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT German	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) BEC (Base Environmental Coordinator) (2) BCE (Base Civil Engineer) (3) BEE (Bioenvironmental Engineering)

Section 9

Special Programs Management

Section 9

SPECIAL PROGRAMS MANAGEMENT

A. Applicability

All installations will need to be aware of regulations dealing with asbestos, polychlorinated biphenyls (PCBs), and related substances. For this reason, at least some of the provisions in this Section can be expected to apply to all installations.

B. National Laws and Regulations

- The **Verordnung ueber gefaehrliche Stoffe (Gefahrstoffverordnung -- GefStoffV)** (Hazardous Substances Ordinance) contains provisions that apply to asbestos and to buildings and equipment that contain it. Also included in its scope are PCDDs (polychlorinated dibenzo-p-dioxins) and PCDFs (polychlorinated dibenzofurans).

- The **Verordnung zum Verbot von polychlorierten Biphenylen, polychlorierten Terphenylen und zur Beschraenkung von Vinylchlorid (PCB-, PCT-, VC-Verbotsverordnung)** (Regulation Prohibiting Polychlorinated Biphenyls and Polychlorinated Terphenyls and Limiting Vinyl Chloride) regulates the use of certain PCBs and PCTs and contains other provisions relevant to storage.

C. State Laws and Regulations -- Rheinland-Pfalz

No state laws or regulations relevant to special programs management were discovered.

D. Key Compliance Definitions

- *Asbestos* - the following silicates with fibrous structure are considered asbestos:
  - actinolite (CAS No. 77536-66-4)
  - amosite (CAS No. 12172-73-5)
  - anthophyllite (CAS No. 77536-67-5)
  - chrysotile (CAS No. 12001-29-5)
  - crocidolite (CAS No. 12001-28-4)
  - tremolite (CAS No. 77536-68-6)

  (GefStoffV, Appendix 2, 1.3.1.1(2)).

- *PCDDs / PCDF* - for the purposes of Special Programs Management, polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) include the following in concentrations of 0.1 milligrams (mg)/kilograms (kg) (parts per million (ppm)), except where otherwise indicated:
  - 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) (in concentrations of more than 0.01 mg/kg (ppm))
  - 1,2,3,7,8-penta-CDD
  - 1,2,3,6,7,8-hexa-CDD
  - 1,2,3,7,8,9-hexa-CDD
  - 1,2,3,4,7,8-hexa-CDD
  - 2,3,7,8-tetrachlorodibenzofuran (TCDF)
  - 2,3,4,7,8-penta-CDF
  - 1,2,3,6,7,8-hexa-CDF.

- *Trip Threshold* - (German: Ausloeseschwelle) is the concentration of a substance in the air of the workplace or in the body which, when exceeded, makes necessary additional measures for the protection of health. The trip threshold is considered to have been exceeded when processes are used during which measures for the protection of health are necessary or when direct contact with the skin occurs (GefStoffV, Section 15(7)).

SPECIAL PROGRAMS MANAGEMENT

GUIDANCE FOR CHECKLIST USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(*)
Asbestos	9-1 through 9-8	(1)(2)(7)(9)(10)
PCDDs and PCDFs	9-9 through 9-11	(1)(2)(3)
PCBs, ETC.	9-12 and 9-13	(1)(3)

(*)CONTACT/LOCATION CODE:

(1) BCE (Environmental Planning)
(2) BEE (Bioenvironmental Engineering)
(3) BCE (Exterior Electric Shop)
(7) BCE (Chief of Operations and Maintenance)
(9) Asbestos Program Officer
(10) Asbestos Operating Officer

SPECIAL PROGRAMS MANAGEMENT

Records to Review

- Inspection, storage, maintenance and disposal records for PCBs/PCB Items
- PCB equipment inventory and sampling results
- Asbestos management plan
- Documentation of asbestos sampling and analytical results
- Documentation of preventive measure or action
- Results of air sampling at the conclusion of response action
- Records of asbestos training program
- List of buildings insulated with asbestos or housing asbestos-containing materials
- Record of demolition or renovation projects completed in the past 5 years (yr) that involve friable asbestos

Physical Features to Inspect

- PCB storage areas
- Equipment, fluids, and other items used or stored at the facility containing PCBs
- Pipe, spray-on, duct, and troweled cementitious insulation and boiler lagging
- Ceiling and floor pipes

Sources to Interview

- BCE (Environmental Planning)
- BEE (Bioenvironmental Engineering)
- BCE (Exterior Electric Shop)
- BCE (Chief of Operations and Maintenance)
- Asbestos Program Officer
- Asbestos Operating Officer

COMPLIANCE CATEGORY: SPECIAL PROGRAMS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ASBESTOS	
9-1. Determine actions or changes since previous review of special programs management (GMP).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report. (1)(2)
...	...
9-2. Installations should maintain a file of German laws and regulations that pertain to special programs management (GMP).	Verify that the following Federal laws and regulations are kept at the installation: (1)(2) - *Verordnung ueber gefaehrliche Stoffe (Gefahrstoffverordnung -- GefStoffV)* - *Verordnung zum Verbot von polychlorierten Biphenylen, polychlorierten Terphenylen und zur Beschraenkung von Vinylchlorid (PCB-, PCT-, VC-Verbotsverordnung).*
...	...

9-3. The use of certain types of products that contain asbestos is prohibited (GefStoffV, Appendix 2, 1.3.1.2(1)).	Verify that the following types of products that contain asbestos are not used on the installation: (1)(9)(10)
	- asbestos cement light building board (specific gravity less than 1.0 grams (g)/cubic centimeter (cm^3))
	- toys
	- smokers' paraphernalia such as pipes, cigarette-, or cigar-tips
	- catalytic sieves and insulation equipment intended for use in heaters that run on liquid petroleum gas, or that are built in to such heaters
	- paints, lacquers, varnishes
	- substances or preparations for spraying or spray-painting
	- insulating materials (Isoliermaterialien oder Daemmstoffe) for:
	  - fire protection
	  - noise protection
	  - thermal insulation or protection
	  - insulation from cold
	  - humidity protection
	- filters and filtering aids, with the exception of diaphragms for electrolytic refining processes.
	(NOTE: The prohibition relevant to filters and filtering aids does not go into effect until 31 December 1999.)
	- putties, cements, mastics; adhesives
	- mortars, plasters, fillers, primers
	- floor coverings, road surfaces
	- heat-resistant clothing, with the exception of that rated for temperatures over 500 degrees Celsius ($^{\circ}C$)
	- materials that contain crocidolite.

(1) BCE (Environmental Planning) (2) BEE (Bioenvironmental Engineering) (3) BCE (Exterior Electric Shop) (7) BCE (Chief of Operations and Maintenance) (9) Asbestos Program Officer (10) Asbestos Operating Officer

COMPLIANCE CATEGORY: SPECIAL PROGRAMS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-3. (continued)	(NOTE: The prohibition relevant to heat-resistant clothing does not go into effect until 31 December 1994 for clothing that is to provide protection against molten materials that have temperatures over 1000 °C on contact.) (NOTE: None of the above prohibitions apply to the demolition, cleaning, or maintenance of existing equipment and tools that contain asbestos, if it is impossible to comply with them given the state of the art.)
...	...
9-4. Parts for vehicle brakes and/or clutches may no longer be used if those parts contain asbestos and if it is both technically possible and permissible under traffic regulations to use parts that do not contain asbestos (GefStoffV, Appendix 2, 1.3.1.2(5)).	Verify that asbestos-free parts are used in brakes and clutches when technically possible and permissible under traffic regulations. (1)(7)(9)(10)
...	...
9-5. Installations are required to limit as much as possible the number of employees who are exposed to asbestos dust or dust that contains asbestos (GefStoffV, Appendix 2, 1.3.1.3(1)).	Verify that the number of employees exposed to asbestos dust or dust that contains asbestos is as low as possible. (1)(2)(9)(10)
...	...
9-6. If it should become necessary to deal with asbestos, certain provisions relevant to handling must be complied with (GefStoffV, Appendix 2, 1.3.1.3(2)).	Verify that: (1)(2)(9)(10) - the amount of asbestos is kept as low as possible - raw material asbestos is stored and transported in appropriate closed containers - waste asbestos is collected and disposed of in appropriately labelled closed containers in such a way as to do no damage to human beings or the environment - all rooms, facilities, and tools are regularly cleaned and maintained.
...	...

(1) BCE (Environmental Planning) (2) BEE (Bioenvironmental Engineering) (3) BCE (Exterior Electric Shop) (7) BCE (Chief of Operations and Maintenance) (9) Asbestos Program Officer (10) Asbestos Operating Officer

COMPLIANCE CATEGORY: SPECIAL PROGRAMS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-7. Work areas in which the trip threshold is exceeded are subject to certain provisions (GefStoffV, Appendix 2, 1.3.1.3(3)).	Determine whether the trip threshold has been / is being exceeded in any work areas (See Section 2 (*Hazardous Materials Management*)). (1)(9)(10) Verify that work areas in which the trip threshold is exceeded are: - clearly marked off and labelled with appropriate signs - accessible to authorized personnel only.
...	...
9-8. Work plans that include specific provisions must be established before removing material that contains asbestos from equipment or buildings and before beginning to demolish buildings (GefStoffV, Appendix 2, 1.3.1.3(4)).	Verify that work plans are set up before removing material that contains asbestos from equipment or buildings and before beginning to demolish buildings. (1)(2)(9)(10) Verify that the work plan contains: - provisions necessary for the workers' safety - provisions to dispose of as much asbestos as possible prior to the start of actual demolishing - provisions to dispose of that asbestos in such a way as to prevent harm to human beings and the environment.
...	...
PCDDs and PCDFs	
9-9. The competent authority must be notified in writing immediately if PCDDs and/or PCDFs are handled on the installation (GefStoffV, Appendix 3, 3.2(1), (2)).	Determine whether PCDDs and/or PCDFs are handled on the installation. (1)(2)(3) Verify that the competent authority has been informed of the fact that PCDDs and/or PCDFs are handled on the installation and that the notification includes the following information: - a complete description of the process involving the PCDDs and/or PCDFs - the substances, preparations, products, residual materials, or waste products in which the PCDDs and/or PCDFs are contained, and their concentration - measures being taken to protect human beings and the environment - proof of real possibilities for disposing of any wastes that accumulate - the name of the person designated responsible.
...	...

(1) BCE (Environmental Planning) (2) BEE (Bioenvironmental Engineering) (3) BCE (Exterior Electric Shop) (7) BCE (Chief of Operations and Maintenance) (9) Asbestos Program Officer (10) Asbestos Operating Officer

COMPLIANCE CATEGORY: SPECIAL PROGRAMS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-10. Certain protective steps are to be taken if PCDDs and/or PCDFs are used or produced (GefStoffV, Appendix 3, 3.3(1)).	Verify that: (1)(2)(3) - the process takes place in a closed facility - the amounts of PCDDs and/or PCDFs that accumulate are kept to an absolute minimum, given the state of the art - appropriate personal protective clothing is provided (and is worn by the workers), if workers might be exposed to PCDDs or PCDFs, particularly in the course of maintenance work or correcting disruptions in the operation of the facility or accidents - a person with appropriate expertise is designated responsible for PCDDs and PCDFs.
...	...
9-11. In the event of an incident involving fire, explosion, or other accident during which PCDDs and/or PCDFs are produced and/or released uncontrollably, the competent authority must be *informed* immediately (GefStoffV, Appendix 3, 3.2(4)).	Verify that the competent authority is informed in the event of an incident. (1)(2)(3) (NOTE: Reports of incidents that are made verbally must be followed up on by a written incident report that includes information on the place, time, and course of events.)
...	...
PCBs, ETC.	
9-12. The use of PCBs and certain related chemicals is prohibited (PCB-, PCT-, VC-Verbotsverordnung, Sections 1 and 2).	Verify that the following are not in use on the installation: (1)(3) - trichlorinated and more highly chlorinated biphenyls - polychlorinated terphenyls - preparations that contain a total of more than 50 mg/kg of PCBs or PCTs - products which contain trichlorinated and more highly chlorinated biphenyls, products which contain polychlorinated terphenyls, products which contain preparations that contain a total of more than 50 mg/kg of PCBs or PCTs - preparations and products that are suspected of containing products which contain trichlorinated and more highly chlorinated biphenyls, products which contain polychlorinated terphenyls, products which contain preparations that contain a total of more than 50 mg/kg of PCBs or PCTs, until proven otherwise - products that contain vinyl chloride as an aerosol propellant. (NOTE: The prohibition on use does not apply to proper waste disposal or thermal recycling in a properly permitted facility.)

(1) BCE (Environmental Planning) (2) BEE (Bioenvironmental Engineering) (3) BCE (Exterior Electric Shop) (7) BCE (Chief of Operations and Maintenance) (9) Asbestos Program Officer (10) Asbestos Operating Officer

COMPLIANCE CATEGORY: SPECIAL PROGRAMS MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-12. (continued)	(NOTE: Condensers with more than 1 liter (L) of fluid that contains PCBs may be used until 31 December 1993.) (NOTE: Products that contain trichlorinated or more highly chlorinated biphenyls, polychlorinated terphenyls, or preparations that contain a total of more than 50 mg/kg of PCBs or PCTs may be used until taken out of service, but not later than 31 December 1999.) (NOTE: The prohibition on use does not apply to one-time-only refillings of PCB- or PCT-contaminated transformers with oil that does not contain PCBs or PCTs, provided that the PCB concentration in the oil that is to be replaced does not exceed 2000 mg/kg and that the PCB concentration in the replacement oil does not exceed 50 mg/kg after 6 months (mo) of operation.)
...	...
9-13. If products that contain PCBs are stored in a special room, that room is to be labelled with an easily visible warning sign that meets certain requirements (PCB-, PCT-, VC-Verbotsverordnung, Section 4, (1) and (3)).	Determine whether products that contain PCBs are stored on the installation. (3) Verify that rooms where products that contain PCBs are stored are labelled with enamelled steel signs that have dimensions of at least 148 x 297 millimeters (mm) and that bear the letters PCB. The letters must be 80 mm high and 15 mm wide.

(1) BCE (Environmental Planning) (2) BEE (Bioenvironmental Engineering) (3) BCE (Exterior Electric Shop) (7) BCE (Chief of Operations and Maintenance) (9) Asbestos Program Officer (10) Asbestos Operating Officer

INSTALLATION:	COMPLIANCE CATEGORY: SPECIAL PROGRAMS MANAGEMENT German	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) BCE (Environmental Planning) (2) BEE (Bioenvironmental Engineering) (3) BCE (Exterior Electric Shop) (7) BCE (Chief of Operations and Maintenance) (9) Asbestos Program Officer (10) Asbestos Operating Officer

Section 10

Water Quality Management

Section 10

WATER QUALITY MANAGEMENT

A. Applicability

Since Air Force installations can be expected to be located above groundwater and near surface waters, to be connected to a water supply system and to produce wastewater, portions of this sections of the manual can be expected to apply to all installations.

B. National Laws and Regulations

- The **Gesetz zur Ordnung des Wasserhaushalts -- WHG** (*Water Resources Act*) regulates general uses of surface, coastal, and groundwater, and the protection thereof. Water is to be managed in the interest of the public good, and pollution of water is to be avoided as much as possible. The handling of wastewater is spelled out in some detail.

- The **Verordnung ueber Trinkwasser und ueber Wasser fuer Lebensmittelbetriebe -- TrinkwV** (The Regulation on Drinking Water and Water for Operations Related to Food Processing) specifies the required quality of drinking water and regulates the monitoring thereof. Obligations of the owner/operator of a water supply system are spelled out, subject to modification by the Public Health Office or the highest competent authority.

- The **Allgemeine Rahmen-Verwaltungsvorschrift ueber Mindestanforderungen an das Einleiten von Abwasser in Gewaesser -- Rahmen-AbwasserVwV** (General Administrative Provision on Minimum Requirements for Discharging Wastewater into Waters) spells out the properties that wastewater must have before it can be discharged into bodies of water. The regulated substances are listed, including specifics on testing procedures for those substances. Limit values for individual substances are given in a series of appendices that cover particularly those areas where hazardous substances are likely to be generated.

- The **Verordnung ueber die Herkunftsbereiche von Abwasser -- AbwHerkV** (Regulation on the Origins of Wastewater) defines in detail the areas that WHG considers likely origins of hazardous substances. On installations, such points of origin would include places where chemicals are stored or transferred, machine shops and equipment maintenance areas, health care facilities, water treatment plants, and others. Compliance issues are not directly raised in this ordinance; they are covered in WHG, Rahmen-AbwasserVwV, LWG, and EUeVOA.

- The **Gesetz ueber die Umweltvertraeglichkeit von Wasch- und Reinigungsmitteln -- WRMG** (Act on Environmental Compatibility of Detergents and Cleaning Agents) regulates which detergents or cleaning agents may be used or brought into circulation. Detergents and cleaning agents, as well as cleaning facilities, must be made and used in such a way that their adverse effect on the environment is kept as low as possible, particularly with respect to water ecology and drinking water. Any detergent available in trade (even if intended for personal uses at home) must be licensed by the Federal Office for the Environment; offenses are subject to fines.

- The **Verordnung ueber die Abbaubarkeit anionischer und nichtionischer grenzflaechenaktiver Stoffe in Wasch- und Reinigungsmitteln -- TensV** (Regulation on the Degradability of Anionic and Non-Ionic Surfactants in Detergents and Cleaning Agents) supplements WRMG by spelling out the percentage of surfactants in detergents and cleaning agents that must be biodegradable.

- The **Verordnung ueber Hoechstmengen fuer Phosphate in Wasch- und Reinigungsmitteln -- PHoechstMengV** (Regulation on Limits for Phosphates in Detergents and Cleaning Agents) supplements WRMG by spelling out the limits of phosphates permissible in detergents and cleaning agents.

- The **Klaerschlammverordnung -- AbfKlaerV** (Regulation on Sewage Sludge) regulates under what conditions sewage sludge from wastewater treatment facilities may be used as fertilizer for agricultural or gardening purposes. Overall, the generator/supplier of sewage sludge can be considered as responsible for the quality of the soil to which sewage sludge is applied as the owner of that land.

- The **Gesetz ueber Abgaben fuer das Einleiten von Abwasser in Gewaesser -- AbwAG** (Act on Wastewater Charges) regulates the wastewater charges which a party introducing wastewater into surface water or groundwater must pay. The wastewater fee generally corresponds to the degree of damage or pollution which wastewater causes.

- The **Gesetz ueber die Umweltvertraeglichkeitspruefung (UVPG)** (*Environmental Impact Statement Act*) requires that environmental impact studies be done prior to the construction of or substantial modification to certain types of facilities under certain conditions. U.S. forces in Germany are permitted to substitute an environmental review for full-blown environmental impact statements.

C. State Laws and Regulations

- The **Wassergesetz fuer das Land Rheinland-Pfalz (Landeswassergesetz -- LWG)** (Water Act for the State of Rheinland-Pfalz) regulates the uses of water in the state of Rheinland Pfalz. Details are given concerning classification of bodies of water, competency issues regarding water management, technical specifications prescribed for various facilities, and other matters. The act supplements the Federal WHG.

- The **Landesverordnung ueber die Genehmigungspflicht fuer das Einleiten wassergefaehrdender Stoffe in eine Abwasseranlage und ihre Ueberwachung** (State Regulation on Permit Requirements for Introducing H Harmful to Water into Wastewater Facilities and on Monitoring) makes it necessary to have a permit before certain substances or groups of substances may be introduced into public wastewater facilities, and it also sets up certain monitoring requirements that must be met if a facility requires a permit under the regulation.

- The **Landesverordnung ueber die Eigenueberwachung von Abwasserbehandlungsanlagen -- EUeVOA** (State Regulation on the Self-Monitoring of Wastewater Treatment Facilities) regulates the scope and frequency at which facilities that treat more than 8 cubic meters (m^3) of wastewater per day must monitor the properties of wastewater, and the format in which reports must be made to the competent authority.

- The **Landesverordnung ueber den Bau und Betrieb von Garagen und Stellplaetzen (Garagenverordnung)** (State Regulation on the Construction and Operation of Garages and Parking Areas) contains one or two provisions related to spills of petroleum, oils, and lubricants, and to oil/water separators.

- The **Landesgesetz zur Ausfuehrung des Abwasserabgabengesetzes - AbwAG - (Landesabwasserabgabengesetz -- LAbwAG)** (State Act on the Implementation of the Act on Wastewater Charges) regulates specifics on how wastewater charges are assessed and when they must be paid.

D. Key Compliance Definitions

- *Biochemical Oxygen Demand - BOD* - the amount of dissolved oxygen required to meet the metabolic needs of aerobic microorganisms in water rich in organic matter, such as wastewater and sewage. A standard laboratory testing procedure measures the oxygen demand for 5 days at 20 degrees Celsius (°C), abbreviated as BOD_5. This parameter is relevant to wastewater treatment and

monitoring. The German equivalent is *biochemischer Sauerstoffbedarf in 5 Tagen - BSB_5*. (Rahmen-AbwasserVwV, all Appendices; EUeVOA, Appendices 1 and 2).

- *BOD_5* - see Biochemical Oxygen Demand.

- *Bodies of Water* - all naturally or artificially created running or standing surface waters. Depending on their significance for water supply, distribution, and management, bodies of water are grouped into three classes:
  - Class I Waters - The following rivers or portions of rivers in the state of Rheinland-Pfalz: Rhine, Moselle, Saar, Lahn, Sauer, Our, Nahe, Glan, Sieg, and oxbows of the Rhine near Leimersheim and Lingenfeld.
  - Class II Waters - Waters of this class have considerable significance for water supply, distribution, and management, but are not Class I waters. The list of the particular bodies of water that belong to Class II is drawn up by the state Minister for Environment and Health.
  - Class III Waters - Any other bodies of water.

  Class I Waters are state or Federal property, while Class II and Class III Waters become part of the properties adjoining the shoreline. Maintenance and competence issues concerning bodies of water are regulated depending on the class to which the water is assigned (LWG, Sections 3 and 4).

- *Building Plumbing Systems* - the system of pipes within a building through which drinking water is distributed to consumers, after the water has been distributed to the building by a water supply system (TrinkwV, Section 8 (3)).

- *Chemical Oxygen Demand - COD* - the amount of oxygen, expressed in parts per million, consumed under specified conditions in the oxidation of the organic and oxidizable inorganic matter contained in industrial wastewater, corrected for the influence of chlorides. This parameter is relevant to wastewater treatment and monitoring. The German equivalent is *chemischer Sauerstoffbedarf - CSB*. (Rahmen-AbwasserVwV, all Appendices; EUeVOA, Appenices 1 and 2).

- *Class I, Class II, Class III Waters* - see Bodies of Water

- *COD* - see Chemical Oxygen Demand.

- *Competent Authority* - that government agency which has jurisdiction over water management and water supply systems. There are three levels of competent authority, which are in charge of the following specific water management issues:
  - Highest-level Authority - construction and operation of thermal power stations and nuclear facilities

- Higher-level Authority - any use of groundwater and of Class I and Class II waters removal and/or diversion of more than 400 m^3 of water per day from Class III waters uses of Class III waters related to the construction and operation of water reservoirs introduction and discharge of substances into Class III waters whenever specific conditions are not covered by the lower-level authority
- Lower-level Authority - discharge of up to 8 m^3 of residential type wastewater into groundwater per day, and the removal of up to 24 m^3 of groundwater per day removal, tapping, and/or diversion of groundwater, and its discharge into bodies of water, in connection with drilling operations removal, tapping, and/or diversion of groundwater in connection with construction projects removal and/or diversion of up to 400 m^3 of water from Class II waters per day discharge of up to 750 m^3 of wastewater into a body of water per day, provided the wastewater is not subject to specific legislation due to its point of origin introduction and discharge of up to 8 m^3 of other substances into bodies of water per day all other uses of water that do not fall under the jurisdiction of the higher-level or highest-level authority (LWG, Section 34 (1)).

(NOTE: While all three levels of competent authority are vested with the state, it appears that the highest-level authority is closely linked with Federal government agencies, and that the lower-level authority is linked with local government agencies.)

- *Detergents and Cleaning Agents* - any kind of surfactant or organic solvent that is used for the purpose of cleaning and that is known subsequently to get into water. Only detergents and cleaning agents that conform to prescribed standards of biodegradability and limits on phosphates and other contents are licensed for use (WRMG, Section 2 (1); TensV, Section 1; PHoechstMengV, Section 2).

- *Drinking Water* - water intended for human consumption. This includes water used in food processing or for making ice. While the final oversight of the quality of drinking water is vested with the state, the day-to-day monitoring of drinking water is the responsibility of the operators of a water supply system (TrinkwV, Section 7 (1) and (2); LWG, Section 49 (1)).

- *Flood Plains* - areas that have been designated as such by the competent authority, and any area between the shoreline and main levees of a body of water. Special restrictions apply in such areas in order to assure the harmless draining of floodwaters (LWG, Section 88).

- *Hardness of Water* - the classification of the hardness of water into four distinct degrees. Hardness degree 1 equals 1.3 millimol of total hardness per liter (L), or lower; hardness degree 2 equals 1.3-2.5 millimol of total hardness/L;

hardness degree 3 equals 2.5-3.8 millimol of total hardness/L; hardness degree 4 equals 3.8 millimol of total hardness/L, or higher. The hardness of water and recommended dosages of detergents and cleaning agents are to correlate (WRMG, Section 7 (5)).

- *Hazardous Substances [gefaehrliche Stoffe]* - substances that are especially damaging to the environment and to water in particular. Special regulations must be observed before such substances are discharged into wastewater that will subsequently be treated in communal wastewater treatment facilities. Among the points of origin where such substances are generated, the following can be expected to apply to installations:
  - scrubbers on incinerators
  - areas where metal is worked on in any fashion (i.e. machine shops, metal finishing shops [Gleitschleifanlagen], paint shops etc.)
  - areas where glass is worked on
  - vehicle maintenance and cleaning operations, junking operations
  - laundromats and dry cleaning operations
  - health care facilities
  - areas where chemicals are stored, transferred, or disposed of
  - operations involved in copying, printing, graphic reproduction, development
  - water treatment facilities

  (WHG, Section 7a (3); LWG, Section 55; AbwHerkV).

  (NOTE: In analogy to other areas listed above, the area of copying, printing, graphic reproduction, development, etc. can be expected to require a special permit anytime before wastewater may be discharged. In this case, however, it was not possible to determine permit requirements from outside Germany. For Rheinland-Pfalz, state regulations specify the frequency at which wastewater must be monitored for certain parameters, but no limit values for wastewater from such points of origin could be found anywhere.)

- *License [Bewilligung]* - the less restrictive of the two types of approval issued by the competent authority that allows the use of water. The license document lists the location where the water is to be used, the kind and purpose of use, and its scope; any conditions or requirements that must be met, and restrictions that apply; details about costs involved; and the length of time for which the license will be valid. A license is renewable, provided that requirements applicable at the time of renewal are met. The renewal must be applied for at least 6 months (mo) before the current license expires. Licensing does not allow the use of facilities or properties owned by others. A license cannot be issued for the purpose of discharging or introducing substances into water (WHG, Section 8; LWG, Sections 26 (1), 31, and 114 (2)).

- *Load* - the concentration of contaminants in wastewater. The percentage by which the load of a specific substance must be reduced in a wastewater treatment facility may be prescribed. The permit to operate a wastewater treatment facility and to discharge wastewater usually specifies the permissible load, based on the maximum operating capacity of the facility (Rahmen-AbwasserVwV, Section 2.2.3).

- *Maintenance of a Body of Water* - the upkeep of a body of water, taking into account its ecological capacity and implementing measures such that the body of water is retained in a state as close as possible to the natural one. All naturally created, running bodies of water are maintained by the state or local communities. An installation is responsible for the maintenance of all standing waters (i.e., lakes, ponds, etc.), and artificially created running waters on its property.

  Maintenance includes the following specific measures:
  - maintaining the bed of the body of water so that it can drain properly (without clogging up)
  - securing the shoreline primarily by plants native to the area, and by technology compatible with nature
  - maintaining and promoting the biological effectiveness of the waters so that plants and animals can live there
  - creating shorelines that are wide enough and tending them so that plants and animals can live on them
  - keeping the waters and shorelines free of solid waste and litter

  (LWG, Section 63 (1) and (4)); and Section 64 (1).

- *Permit [Erlaubnis]* - the more strict of the two types of approval issued by the competent authority that authorizes the use of water. A permit is contingent on compliance with environmental impact requirements and can be revoked at any time. The permit document lists the location where the water is to be used, the kind and purpose of use, as well as its scope; any conditions or requirements that must be met (i.e. limit values for substances), and restrictions that apply; details about costs involved; and the length of time for which the license will be valid. Permits are renewable, provided that requirements applicable at the time of renewal are met. The renewal must be applied for at least 6 mo before the current permit expires. The disposal of wastewater is always subject to the issuance of a permit which specifies or implies thresholds for the polluting properties of that wastewater (WHG, Sections 7 and 7a; AbwAG, Section 4 (1); LWG, Sections 26 (1), 31, and 114 (2)).

- *Pollution Unit [Schadeinheit]* - a unit which measures the degree of damage which wastewater causes to surface waters or groundwater. It is based on the content of certain substances in wastewater, as well as on the toxicity of wastewater to fish. Pollution units determine the wastewater charges which the

discharging party must pay to the state. The permissible level of pollution units is specified in the permit issued for the discharge of wastewater (AbwAG, Sections 3 (1) and 4 (1)).

- *Qualified Sample* - a sample of wastewater to be tested for various properties. A qualified sample consists of water mixed together from at least five individual samples that were drawn within a time frame of at most 2 hours (h) and at intervals of at least 2 minutes (min) between the individual samples (Rahmen-AbwasserVwV, Section 2.2.3).

- *Raw Sludge* - sludge that is removed from wastewater treatment plants, yet which has not been treated in such a manner that pollutants have been removed. Dehydration of raw sludge is not considered treatment of sewage sludge (AbfKlaerV, Sections 2 (2)).

- *Runoff* - water from precipitation onto developed, paved surfaces. Runoff is considered wastewater, yet may be exempt from wastewater charges (AbwAG, Sections 2 (1) and 7 (2)).

- *Sewage Sludge* - the sludge that is obtained as a result of treating wastewater at a wastewater treatment facility; sludge from which pollutants have been largely removed, regardless of whether it is dehydrated or processed in some other form. Under certain conditions, sewage sludge may be used as fertilizer for agricultural or gardening purposes (AbfKlaerV, Sections 2 (2) and 3 (1)).

- *Substances Harmful to Water* - includes the following:
  - crude oils, gasoline, diesel fuels, and heating oils
  - other fluid or gaseous substances capable of polluting water or otherwise degrading it.

  (WHG, Section 19a(2)).

  Such substances as the following are included:
  - acids, caustics
  - alkali metals; silicons that contain more than 30% silicon;
  - organometallic compounds, halogens, haloid acids, metal carbonyls, and corrosives
  - petroleum and creosotes and their by-products
  - liquid and water-soluble hydrocarbons, alcohols, aldehydes, ketones, esters; organic compounds that contain halogens, nitrogen, or sulfur, poisons

  (WHG, Section 19g(5)).

Specifically included by regulation in the category of substances harmful to water are:

- liquid petroleum products such as naphtha, pyrolysis gasoline, and solvent naphtha
- creosotes, such as coaltar oils and lignite tar oils
- liquid hydrocarbons such as cyclohexane
- acetylene and ethylene
- organic acids such as acetic acid and acrylic acid
- aldehydes such as formaldehyde and acetaldehyde
- alcohols such as methanol and propylene glycol
- esters of acetic acid such as ethyl acetate and vinyl acetate
- halogenated hydrocarbons such as vinyl chloride, carbon tetrachloride, perchloroethylene, and dichloroethane
- nitrogenated hydrocarbons such as nitriles and amines
- aromatic compounds such as benzene,isopropylbenzene, toluene, and xylene
- inorganic acids and caustics such as sulfuric acid, hydrochloric acid, caustic soda
- chlorine
- ammonia
- solutions that contain salts in such a concentration that they are likely to pollute water or otherwise degrade it
- other liquid or gaseous substances that contain the substances listed in this definition in such a concentration that they are likely to pollute water or otherwise degrade it

(Verordnung ueber wassergefaehrdende Stoffe bei der Befoerderung in Rohrleitungsanlagen, Section 1(1); see also the *Katalog wassergefaehrdender Stoffe*).

- *Surface Waters* - bodies of water that are not groundwater. Except for water reservoirs, surface waters may be used by the public for recreational type purposes without special permits (LWG, Section 31 (1)).

- *Technical Specifications or Codes* - details concerning the construction and operation of various facilities relating to water management. In the state of Rheinland-Pfalz, they are published in the *Ministerialblatt der Landesregierung von Rheinland-Pfalz* (LWG, Sections 56 (1) and 78 (1)).

- *Testing of Water* - the analysis of water for specific parameters. Technical details for procedures to be used for parameters in drinking water are listed in TrinkwV, Appendix 1; procedures for parameters in wastewater are listed in Rahmen-AbwVw (TrinkwV, Appendix 1; Rahmen-AbwVwV).

  (NOTE: Laboratories that will do the testing for an installation presumably are aware of applicable technical details and specific procedures.)

- *Toxicity to Fish* - the degree to which wastewater is toxic to fish, measured as the degree of dilution (G_F) necessary to render wastewater nontoxic to fish. This dilution factor is determined by exposing testfish (Leuciscus idus melanotus) to different dilutions of wastewater (AbwAG, Appendix B, Section 7).

- *Two-hour Mixed Sample* - a sample of wastewater to be tested for various properties, presumably consisting of several individual samples taken within a 2 h period. Specifics about a 2 h sample are not given, but the term often appears interchangeable with or as an alternative to "qualified sample" (Rahmen-AbwasserVwV, all Appendices).

- *Used Water [Schmutzwasser]* - that portion of wastewater which is not runoff; water that has been qualitatively altered due to residential, commercial, or agricultural uses, or in connection with storage, disposal, or treatment of waste. Used water generally is subject to wastewater charges (AbwAG, Sections 1, 2 (1), and 8 (2)).

- *Uses of Water* - any use of water in the following manners:
  - removal and diversion of waters from surface waters
  - damming and lowering of surface waters
  - removal of solids from surface waters so that the condition of the water or its drainage is affected
  - introduction or discharge of substances into surface waters
  - discharge of substances into the groundwater
  - removal, unearthing, drawing, and diverting of groundwater
  - damming, lowering, and conducting of groundwater through facilities intended for these purposes
  - measures that are likely to cause lasting or significant deleterious changes in the physical, chemical, or biological quality of the water.

  Measures that promote the development of surface water are not considered uses, nor are measures taken for the maintenance of a surface water, provided that chemical substances are not used (WHG, Section 3).

- *Wastewater* - used water and storm water runoff. Wastewater must meet certain quality requirements before it can be discharged into bodies of water. In general, the properties of wastewater are more closely prescribed if the source of the wastewater is known to generate hazardous substances. Wastewater may be discharged only after by proper treatment; dilution or mixing of wastewater is not acceptable to attain prescribed limits (AbwAG, Section 2 (1); Rahmen-AbwasserVwV, Sections 1.1 and 2.2.1).

- *Wastewater Charges* - yearly charges assessed by the state which a party introducing wastewater into surface water or groundwater must pay. The charges

correspond to the degree of pollution that the wastewater causes, measured in pollution units. Applicable charges per pollution unit are the following:

- from 1 January 1993 - 60 DM
- from 1 January 1995 - 70 DM
- from 1 January 1997 - 80 DM
- from 1 January 1999 - 90 DM.

Funds generated from these charges are used to maintain and improve the quality of water (AbwAG, Sections 1, 3 (1), 11 (1), and 13 (1); LAbwAG, Sections 1, 2, 7, 14, and 15).

- *Wastewater Disposal* - the collection, forwarding, treatment, discharge, percolation, spray irrigation, and irrigation of wastewater, as well as the dewatering of sewage sludge in connection with wastewater disposal. Specifics are regulated by the states (WHG, Section 18a).

- *Wastewater Treatment Facility* - a facility which serves to reduce or remove the polluting properties of wastewater. This also includes facilities that in whole or in part prevent the generation of wastewater. Wastewater treatment facilities are regulated on the basis of the daily volume of wastewater processed, taking into account the point of origin where the wastewater was generated. In Rheinland-Pfalz, a wastewater treatment facility must be technically equipped for monitoring the treatment process, which is the responsibility of the director or operator of such a facility (self-monitoring). (AbwAG, Section 2 (3); Rahmen-AbwasserVwV, Appendix 1, Section 2; EUeVOA, Sections 2 and 7, and Appendices 1 and 2).

- *Water Protection Area* - an area that has been determined to require special protection in the interest of public good. This may be necessary in order to protect water supplies, to supplement groundwater, or to prevent harmful runoff of precipitation, soil erosion, and contamination of water by fertilizers or pesticides. Certain activities may be restricted or prohibited in water protection areas, and individuals with property rights may have to tolerate certain measures (WHG, Section 19).

- *Water Reservoir* - a body of water that functions as a storage area for times of short water supply, or to which floodwaters can be diverted in times of overabundance. Public use of a reservoir for recreational or other purposes is restricted (LWG, Sections 36 (1) and 38 (2)).

- *Water Supply Systems* - systems, including the network of mains and other fixed pipes, from which or through which drinking water is distributed for eventual consumption. In most cases, water supply systems distribute drinking water directly through service connections to building plumbing systems, though other means are also possible (TrinkwV, Section 8).

- *Water Treatment Facility* - a facility where water is treated so that it attains the qualities prescribed for drinking water or water to be used for other purposes. A water treatment facility can be expected to generate wastewater which in turn must be treated at a wastewater treatment plant (22. AbwasserVwV, Section 1.1).

WATER QUALITY MANAGEMENT

GUIDANCE FOR CHECKLIST USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PEOPLE OR GROUPS:(*)
All Installations	10-1 through 10-3	(1)(2)
Water		
Groundwater	10-4 and 10-5	(1)(2)(4)
Surface Water	10-6 and 10-7	(1)(2)(4)
Drinking Water		
General Quality Requirements	10-8 through 10-11	(1)(2)
Treatment	10-12 through 10-21	(1)(2)
Supply Systems	10-22 through 10-28	(1)(2)
Wastwater Treatment	10-29 through 10-38	(1)(3)(4)
Wastewater Discharge	10-39 through 10-62	(1)(2)(3)
Rheinland-Pfalz Water		
Surface Water	10-63 through 10-67	(1)(2)(4)
Rheinland-Pfalz Drinking Water		
Supply Systems	10-68 through 10-71	(1)(2)(4)
Rheinland-Pfalz Wastewater		
Treatment	10-72 and 10-73	(3)
Rheinland-Pfalz Wastewater		
Discharge	10-74 through 10-83	(3)

(*)CONTACT/LOCATION CODE:

(1) BCE (Environmental Planning)
(2) BEE (Bioenvironmental Engineering)
(3) Wastewater Treatment Plant Superintendent
(4) BCE (Natural Resources Planner)

WATER QUALITY MANAGEMENT

Records to Review

- Bacterial and chemical analyses of drinking water, including sampling dates and locations, dates of analyses, analytical methods used, and results of analyses
- Monthly operating reports (flow, chlorine residual, etc.)
- Records of planning and construction of injection wells
- Results of injection well monitoring
- Records of facility projects, including any petition for review, that may potentially cause contamination of a sole source aquifer through its recharge zone
- Discharge monitoring reports for the past year
- Laboratory records and procedures
- Monthly operating reports for wastewater treatment facilities
- Flow monitoring calibration certification and supporting records
- Ash pond volume certification and supporting records
- Red water inspection records
- Spill Prevention, Control, and Countermeasures (SPCC) Plan
- All records required by SPCC
- Sewage treatment plant operator certification
- Sewer and storm drain layout

Physical Features to Inspect

- Drinking water collection, treatment, and distribution facilities
- On-base laboratory analysis facilities
- Underground injection wells
- Discharge outfall pipes
- Wastewater treatment facilities
- Industrial treatment facilities
- Streams, rivers, open waterways
- Floor and sink drains (especially in industrial areas)
- Stormwater collection points (especially in industrial areas)
- Oil storage tanks
- Oil/water separators

Sources to Interview

- BCE (Environmental Planning)
- BCE (Natural Resources Planner)
- BEE (Bioenvironmental Engineering)
- Wastewater Treatment Plant Superintendent

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL INSTALLATIONS	
10-1. Determine actions or changes since previous review of water quality management (GMP).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report. (1)(2)
...	...
10-2. Installations should maintain a file of German laws and regulations pertaining to water management (GMP).	Verify that copies of the following Federal laws and regulations are kept at the installation: (1)(2) - *Gesetz zur Ordnung des Wasserhaushalts (Wasserhaushaltsgesetz - WHG)* - *Verordnung ueber Trinkwasser und ueber Wasser fuer Lebensmittelbetriebe (Trinkwasserverordnung - TrinkwV)* - *Allgemeine Rahmen-Verwaltungsvorschrift ueber Mindestanforderungen an das Einleiten von Abwasser in Gewaesser - Rahmen-AbwasserVwV* - *Verordnung ueber die Herkunftsbereiche von Abwasser - AbwHerkV* - *Gesetz ueber die Umweltvertraeglichkeit von Wasch- und Reinigungsmitteln (Wasch- und Reinigungsmittelgesetz - WRMG)* - *Verordnung ueber die Abbaubarkeit anionischer und nichtionischer grenzflaechenaktiver Stoffe in Wasch- und Reinigungsmitteln - TensV* - *Verordnung ueber Hoechstmengen fuer Phosphate in Wasch- und Reinigungsmitteln (Phosphathoechstmengenverordnung - PHoechstMengV)* - *Klaerschlammverordnung - AbfKlaerV* - *Gesetz ueber Abgaben fuer das Einleiten von Abwasser in Gewaesser (Abwasserabgabengesetz - AbwAG)* - *Gesetz ueber die Umweltvertraeglichkeitspruefung (UVPG).* Verify that copies of the following state laws and regulations for Rheinland-Pfalz are kept at the installation: - *Wassergesetz fuer das Land Rheinland-Pfalz (Landeswassergesetz - LWG)* - *Landesverordnung ueber die Genehmigungspflicht fuer das Einleiten wassergefaehrdender Stoffe in eine Abwasseranlage und ihre Ueberwachung* - *Landesverordnung ueber die Eigenueberwachung von Abwasserbehandlungsanlagen - EUeVOA* - *Landesverordnung ueber den Bau und Betrieb von Garagen und Stellplaetzen (Garagenverordnung)* - *Landesgesetz zur Ausfuehrung des Abwasserabgabengesetzes - AbwAG - (Landesabwasserabgabengesetz - LAbwAG).*
...	...

(1) BCE (Environmental Planning) (2) BEE (Bioenvironmental Engineering) (3) Wastewater Treatment Plant Superintendent (4) BCE (Natural Resources Planner)

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-3. Any use of water (see definition for "uses of water") requires a permit or license (WHG, Section 2).	Verify that a permit or license has been obtained for the use of water. (1)(2) (NOTE: In connection with maneuvers or tests for the purpose of defense or preventing dangers to public safety, certain uses of water do not require a permit or license, generally when water is temporarily removed from and later reintroduced to a body of water (WHG, Section 17 a).)
...	...
WATER **Groundwater**	
10-4. The competent authority must be notified when groundwater is accidentally tapped during excavation for a development project (WHG, Section 35).	Verify that the competent authority is notified when groundwater is accidentally tapped during excavation. (1)(2)(4) (NOTE: If the competent authority is not notified at this time, they may come in later and order the whole project to be filled in. In Rheinland-Pfalz, regulations call for cessation of the construction project in addition to notification of the competent authority.)
...	...
10-5. The storage and transportation of substances near groundwater is regulated (WHG, Section 34 (2)).	Verify that storing, loading, unloading, or transporting of substances does not adversely affect the quality of groundwater. (1)(2)(4) Verify that the transport of liquids or gases through pipelines does not adversely affect the quality of groundwater.
...	...
Surface Water	(NOTE: Quality requirements for surface waters are handled by the state. Please refer to the state section of this protocol.)
10-6. The storage and transportation of substances near surface water is regulated (WHG, Section 26 (2)).	Verify that storing, loading, unloading, or transporting of substances does not adversely affect the quality of surface water. (1)(2)(4) Verify that the transport of liquids or gases through pipelines does not adversely affect the quality of surface water.
...	...

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COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-7. The use of detergents and cleaning agents is regulated (WRMG, Sections 3, 4, 7, and 9 (1 and 3).	Verify that any detergents and cleaning agents used on the installation have been licensed by the Federal Office of the Environment and have had an eight digit license identification number issued for them. (1)(2)(4) Verify that the containers of any detergents or cleaning agents used on the installation have at least the following information printed on them in clearly readable script, including in the German language: - surfactants and substances contained in the product as prescribed by the Federal Minister for the Environment, Nature Protection, and Reactor Safety - trade name of the product and its license identification number - name and address of the main office of the product's producer, importer, or distributor - recommendations concerning dosages of the product that cause as little harm to water as possible - graded recommended dosages accounting for different degrees of hardness of water - how much dry laundry, given in kilograms (kg), can be washed with 1 kg of the product, assuming that recommended dosages for water of different degrees of hardness are being observed. (*NOTE:* Since biodegradability and phosphate limits pertain to the production of detergents and cleaning agents rather than to their use, such details are not given here. The use of a licensed product appears to imply compliance with appropriate requirements.)
...	...
DRINKING WATER **General Quality Requirements**	
10-8. The network of pipes from which drinking water is dispensed must not be connected to other water systems (TrinkwV, Section 17 (1)).	Verify that pipes of a water supply system that dispenses drinking water are not connected to any other water system. (1)(2) Verify that pipes of different supply systems are clearly identified by color, unless buried underground.
...	...

(1) BCE (Environmental Planning) (2) BEE (Bioenvironmental Engineering) (3) Wastewater Treatment Plant Superintendent (4) BCE (Natural Resources Planner)

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-9. Drinking water must be free of pathogens (TrinkwV, Section 1 (1), (2), and (3)).	Verify that there are no Escheria coli in 100 milliliter (mL) of drinking water. (1)(2) Verify that there are no coliform bacteria in 100 mL of drinking water. (NOTE: The standard for coliform bacteria is considered met if at least 95 percent of at least 40 samples show negative results.) Verify that there are no fecal streptococci in 100 mL of drinking water. Verify that the number of colonies in drinking water does not exceed 100 mL at an incubation temperature of 20 ^{o}C plus or minus 2 ^{o}C, nor at an incubation temperature of 36 ^{o}C plus or minus 1 ^{o}C. (NOTE: In supply systems that dispense less than 1000 m^3 of drinking water per year, the number of colonies must not exceed 1000 mL at an incubation temperature of 20 ^{o}C plus or minus 2 ^{o}C, nor 100 mL at an incubation temperature of 36 ^{o}C plus or minus 1 ^{o}C.)
...	...
10-10. Chemical substances or radioactive substances must not be present in drinking water at concentrations harmful to human health (TrinkwV, Sections 2, 3, and 4).	Verify that chemical substances in drinking water do not exceed the limit values given in Table 10-1 and Table 10-2, Chart III, nor the standard values in Table 10-3. (1)(2)
...	...
10-11. Sensory and physico-chemical qualities of drinking water are subject to regulation (TrinkwV, Section 3).	Verify that sensory and physico-chemical parameters of drinking water do not exceed the limit values of Table 10-2, Charts I and II. (1)(2)
...	...
Treatment	
10-12. Whenever drinking water is treated for the purpose of disinfection or otherwise attaining prescribed properties, special requirements for quality must be met (TrinkwV, Sections 1 (2) and 1 (4); 5; and 6).	Verify that the number of colonies in treated water does not exceed 20 mL at an incubation temperature of 20 ^{o}C plus or minus 2 ^{o}C, once the treatment process has been completed. (1)(2)
...	...

(1) BCE (Environmental Planning) (2) BEE (Bioenvironmental Engineering) (3) Wastewater Treatment Plant Superintendent (4) BCE (Natural Resources Planner)

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-13. Only certain additives may be used in the treatment of drinking water (TrinkwV, Section 5 (1)).	Verify that no additives other than those listed in Table 10-4 are used in the treatment of drinking water. (1)(2)
...	...
10-14. Permissible additives may be used only in certain concentrations for specific purposes (TrinkwV, Section 5 (1) and (2)).	Verify that permissible additives are used only in the concentrations and for the purposes listed in Table 10-4. (1)(2)
...	...
10-15. Only certain concentrations of permissible additives may be found in treated water after the treatment process is complete (TrinkwV, Section 5 (2)).	Verify that the concentrations of permissible additives listed in Table 10-4 are not exceeded in treated water after the treatment process is complete. (1)(2) Verify that chemical substances in treated drinking water do not exceed the values listed in Tables 10-1 and 10-2.
...	...
10-16. Water that has been disinfected with chlorine, with sodium-, magnesium-, or calcium hypochlorite, or with chlorinated lime, must contain a residue of free chlorine or chlorine dioxide after completion of the treatment process (TrinkwV, Section 1(4)).	Determine whether drinking water is disinfected with chlorine, with sodium-, magnesium-, or calcium hypochlorite, or with chlorinated lime. (1)(2) Verify that disinfected drinking water contains a residue of at least 0.1 milligrams (mg)/L free chlorine or at least 0.05 mg/L chlorine dioxide at the end of the disinfection process. (NOTE: If the treated water is dechlorinated before distribution to consumers, the residue must be detectable before the dechlorination process.)
...	...
10-17. When drinking water has been treated for the purpose of softening it, a minimum of earth alkali must be present after completion of the treatment process, and a minimum degree of acidity is prescribed for the drinking water (TrinkwV, Section 5 (3)).	Determine whether the drinking water has been softened. (1)(2) Verify that earth alkali, calculated as calcium, is present in drinking water at a minimum of 60 mg/L after the treatment process has been completed. Verify that the acidity $K_{S\ 4,3}$ of softened drinking water is at least 1.5 mol/m^3.
...	...

(1) BCE (Environmental Planning) (2) BEE (Bioenvironmental Engineering) (3) Wastewater Treatment Plant Superintendent (4) BCE (Natural Resources Planner)

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-18. Ion exchange may be used for softening drinking water only if the content of sodium ions is not increased (TrinkwV, Section 5 (4)).	Verify, if an ion exchange process is used, that the content of sodium ions is not increased in softened drinking water. (1)(2)
...	...
10-19. Treatment of drinking water must be recorded at least once per week, and records must be kept and be accessible to the public for 6 mo (TrinkwV, Section 15 (4)).	Verify that the kind and concentration of additives used in the treatment process are recorded at least once per week, in writing or on data carriers. (1)(2) Verify that records on water treatment are kept for 6 mo, and that they are accessible to the public during regular business hours.
...	...
10-20. The use of additives for the treatment of drinking water must be disclosed to the consumers, either by publication of the used additives in local newspapers, or by direct notification of the consumers (TrinkwV, Section 15 (5)).	Verify that consumers receive information about when drinking water is being treated, and which additives are being used. (1)(2)
...	...
10-21. The use of additives for the treatment of drinking water in a building plumbing system must be disclosed to the consumers (TrinkwV, Section 15 (6).	Verify that the kind and quantity of additives used for the treatment of drinking water in a building plumbing system is disclosed to consumers, either through written notification or by posting a note. (1)(2)
...	...
Supply Systems	
10-22. Drinking water must be tested at specific intervals with respect to microbiological, physical, physico-chemical, and chemical criteria (TrinkwV, Sections 10; 11; 13).	Verify that physical, physico-chemical, and chemical tests are carried out according to Table 10-5 ("Scope and Frequency of Tests"). (1)(2)
...	...

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COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-23. The operator of a water supply system must disclose the hardness of drinking water to the consumer at regular intervals (WRMG, Section 8).	Verify that consumers are notified about the hardness of water at least once per year, and whenever long-term changes in the hardness of water occur. (1)(2) (NOTE: Hardness of water is defined in 4 degrees of hardness, with the implication that consumers will use detergents in dosages that correlate to the hardness of water.)
...	...
10-24. Tests of drinking water must be carried out immediately when certain conditions arise, and remedial measures must be taken (TrinkwV, Section 15 (1) and (2)).	Verify that tests are carried out immediately under the following conditions: (1)(2) - pathogen limit values are exceeded - the number of colonies keeps rising - chemical limit values are exceeded - whenever other tests required do not meet compliance standards - whenever other stresses to water occur that may affect the quality of drinking water - whenever plainly recognizable changes or extraordinary incidents occur that may affect the quality of drinking water. Determine the source of the problem adversely affecting the quality of drinking water. Verify that remedial measures are taken to restore the proper quality of drinking water.
...	...
10-25. Documentation of any testing and treatment of drinking water is subject to regulation (TrinkwV, Sections 14 (3) and 15 (4)).	Verify that tests are documented in records, in writing or on data carriers, including the exact address, specific location, date, and time of sampling of the water; the date of the test; the method of testing; and the margin of error. (1)(2) Verify that complete records on all tests of drinking water are kept for 10 years (yr). Verify that copies of records are sent to the Public Health Office upon request. Verify that treatment of water is documented in writing or on data carriers at least once per week, recording the kind and concentrations of any additives used. Verify that records on water treatment are kept for 6 mo, accessible to consumers during regular business hours.
...	...

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COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-26. The Public Health Office must be notified when certain conditions arise (TrinkwV, Sections 9 (1); 15 (1)).	Verify that the Public Health Office is notified immediately under the following conditions: (1)(2) - pathogen limit values are exceeded - the number of colonies keeps rising - chemical limit values are exceeded - whenever other tests required do not meet compliance standards - whenever other stresses to water occur that may affect the quality of drinking water - whenever plainly recognizable changes or extraordinary incidents occur that may affect the quality of drinking water.
...	...
10-27. The Public Health Office must be notified 2 weeks in advance whenever structural or operational changes in a water supply system are to occur (TrinkwV, Section 9 (1)).	Verify that the Public Health Office is notified 2 weeks in advance under the following conditions: (1)(2) - when a water supply system is to be put into service - when a system is altered due to construction or changes in operation - when the property or rights of use are transferred to another person. Verify that blueprints of appropriate facilities are included in the notification, as well as documents on water protection zones, if relevant.
...	...
10-28. The Public Health Office must be notified within 3 days whenever a system is completely or partially shut down (TrinkwV, Section 9 (1)).	Verify that the Public Health Office is notified within 3 days whenever a water supply system is completely or partially shut down. (1)(2)
...	...
WASTEWATER TREATMENT	
10-29. An environmental review must be filed prior to construction of or substantial modification to certain facilities (UVPG, Section 3(1)).	Verify that environmental reviews are submitted prior to the construction of or significant modification to wastewater treatment facilities. (1) (NOTE: Substantial modification to the way such facilities are operated also requires that an environmental review be conducted.)
...	...

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COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-30. A permit is required for the construction, operation, and modification of any wastewater facility designed to process more than 3000 kg/day BOD_5 (raw), or more than 1500 m^3 of wastewater in 2 h (WHG, Section 18c).	Determine whether the wastewater treatment facility is designed to process more than 3000 kg/day BOD_5 (raw), or more than 1500 m^3 of wastewater in 2 h. (3) (NOTE: Cooling water is excepted from the calculation.) Verify that a proper permit has been obtained for the wastewater facility.
...	...
10-31. Raw sludge from a wastewater treatment plant may never be used or disposed of as fertilizer (AbfKlaerV, Section 4 (1)).	Verify that no raw sludge is disposed of as fertilizer. (3)(4) (NOTE: The implication in AbfKlaerV seems to be that raw sludge is treated as solid waste and becomes subject to solid waste regulations (AbfKlaerV, Section 7 (6).)
...	...
10-32. Sewage sludge from a wastewater treatment plant that is to be disposed of and used as fertilizer must meet specific criteria for organically persistent pollutants, organic halogenated compounds, and heavy metals (AbfKlaerV, Section 4(10-12).	Verify that polychlorinated biphenyls (PCBs) for each of the components numbered 28, 52, 101, 138, 153, and 180 do not exceed the limit values *0.2 mg/kg of dry sludge matter.* (3)(4) (NOTE: The numbering of PCB components corresponds to the identification system adopted by the International Union for Pure and Applied Chemistry (IUPAC).) Verify that polychlorinated dibenzodioxins/dibenzofuranes (PCDDs/PCDFs) do not exceed 100 nanograms of TCDD toxicity equivalents per kg of dry sludge substance. Verify that the sum of organically bound halogens, given as adsorbed organically bound halogens (AOX), does not exceed the limit value of 500 mg/kg of dry sludge matter. Verify that heavy metals do not exceed the following limit values (given in mg/kg of dry sludge matter): lead 900 cadmium 10 chromium 900 copper 800 nickel 200 mercury 8 zinc 2500.

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COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-32. (continued)	(NOTE: For some areas, lower limit values for cadmium (5) and zinc (2000) apply. The installation should expect the landowner who takes the sludge to know the particular requirements for the area involved.) (NOTE: These limit values also apply to fertilizer mixtures that contain sewage sludge as one component. Neither the sewage sludge alone, nor the mixture in total, may exceed the limit values (AbfKlaerV, Section 4 (13). In the case of mixtures, the proportion of sewage sludge must be documented by the supplier of sewage sludge (AbfKlaerV, Section 6 (2).)
...	...
10-33. When sewage sludge is to be disposed of and used as fertilizer, the operator/owner of the wastewater treatment facility from which the sludge originates must have the sewage sludge tested for prescribed substances at specific intervals (AbfKlaerV, Sections 3 (5, 6, and 9).	Verify, if no other prescriptions have been made by the competent authority, that the sewage sludge is tested at least every 6 mo for the following substances and parameters: (3)(4) - heavy metals (lead, cadmium, chromium, copper, nickel, mercury, and zinc) - the sum of the organic halogen compounds, given as adsorbed organically bound halogens (AOX) - ammonia nitrogen and total nitrogen - phosphate, potassium, and magnesium - dry residue and organic substance - alkaline substances and pH value. Verify, if no other prescriptions have been made by the competent authority, that the sewage sludge is tested at least once in 2 yr for - polychlorinated biphenyls (PCBs) - polychlorinated dibenzodioxins and dibenzofuranes (PCDDs and PCDFs).
...	...
10-34. Soil to which sewage sludge is to be applied must be tested for prescribed substances and at certain intervals (AbfKlaerV, Sections 3 (2-4 and 9).	Verify that the soil of the land is tested for heavy metals (lead, cadmium, chromium, copper, nickel, mercury, and zinc) before sewage sludge is applied to that land for the first time. (3)(4) Verify that the soil to which sewage sludge is to be applied has been tested for its pH level and for the content of phosphate, potassium, and magnesium available to plants. Verify, if no other prescriptions have been made by the competent authority, that the soil to which sewage sludge is applied is tested for heavy metals at least once every 10 yr. (NOTE: These soil tests, including their costs, are the responsibility the wastewater treatment facility from which the sewage sludge originates.)
...	...

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COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-35. No single limit value for substances in soil to which sewage sludge is to be applied may be exceeded (AbfKlaerV, Sections 4 (8 and 9).	Verify that sewage sludge is applied only if the following limit values for certain substances in the soil are not exceeded (given in mg/kg of dry sludge matter): (3)(4) lead 100 cadmium 1.5 chromium 100 copper 60 nickel 50 mercury 1 zinc 200. Verify that sewage sludge is applied only to soils that have a pH value of 5 or less. (NOTE: In some areas, limit values for cadmium and zinc in sewage sludge are lower (cadmium: 1; zinc: 150), and lower pH values may be prescribed for the soil. One should expect the owner of the land to know about the particular requirements for the area involved, and to call this to the attention to anyone supplying sewage sludge for that area (AbfKlaerV, Sections 7 (8 and 9).)
...	...
10-36. The kinds of land to which sewage sludge may be applied as fertilizer are regulated, and specific restrictions must be observed (AbfKlaerV, Sections 4 (2-7) and 5).	Verify that no sewage sludge is applied to: (3)(4) - land where vegetables or fruit for human consumption are raised - land designated as *Dauergruenland* - land used for silvicultural purposes - land within zones I and II of a water protection area - within 10 meter (m) of the shoreline of a body of water. Verify that sewage sludge is applied to land where forage crops are raised only before those crops are planted. Verify that a special permit has been obtained if sewage sludge is to be applied to land in nature protection areas, natural monuments, national parks, and other protected areas. (NOTE: What *Dauergruenland* is is not spelled out in AbfKlaerV; it appears to refer to areas that are not used for agricultural purposes, but that lie fallow permanently.) (NOTE: Even though an installation is unlikely to be directly involved in applying sewage sludge, as operator of a wastewater treatment facility from which sewage sludge originates, it must observe restrictions and quality standards for the soil as much as the party that owns the land to which sewage sludge is applied. A number of regulations are not spelled out here because one can expect the owner of the land, rather than the supplier of the sludge, to watch for those.)
...	...

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COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-37. The operator of a wastewater treatment plant must keep records on sewage sludge and submit them annually to the competent authority (AbfKlaerV, Section 7 (7)).	Verify that records on sewage sludge are kept at the wastewater treatment plant, and that they contain the following information: (3)(4) - the total amount of sewage sludge produced, and the amount sewage sludge supplied for agricultural purposes (given in metric tons of dry sludge) - the properties of sewage sludge, as regards heavy metals, adsorbed organically bound halogens (AOX), nitrogen, phosphate, potassium, and magnesium, as well as dry residues, organic substances, alkaline substances, and pH level - the kind of treatment of sewage sludge - name and address of any recipient of sewage sludge, including the specific plots to which sludge was applied, identified by their lot number in the land register - results of soil tests, arranged by plots and lot numbers. Verify that the information contained in the records on sewage sludge for any 1 yr is submitted to the competent authority by 31 March of the following year. (NOTE: Sewer sludge that is not supplied for agricultural uses, but is disposed of as solid waste, must be treated according to regulations on solid waste (AbfKlaerV, Section 7 (6)).
...	...
10-38. The operator of a wastewater treatment facility must document the transfer of sewage sludge from the wastewater treatment facility to agricultural uses (AbfKlaerV, Sections 7 (1-3)).	Verify that a delivery note is issued, either in the form given in Table 10-6, or electronically generated. (3)(4) Verify that copies of the delivery note are sent to the competent water and agricultural authorities at least 2 weeks before the intended removal of sewage sludge from the wastewater treatment facility. Verify that both the supplier and the recipient of sewage sludge sign the delivery note on the day of transfer. Verify that the original of the delivery note (or its equivalent in electronic form) is kept as a record at the wastewater treatment facility for 30 yr. (NOTE: This documentation is required even if the operator of a wastewater treatment plant applies sewage sludge to his own property (AbfKlaerV, Section 7 (4). It may be waived for operators of wastewater facilities that treat only residential or otherwise lightly polluted wastewater and serve a population of 1000 or less (AbfKaerV, Section 7 (9).)
...	...

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COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
WASTEWATER DISCHARGE	
10-39. The discharge of any substance into groundwater is regulated (WHG, Section 34).	Verify that the discharge of any substance into groundwater is done only according to a permit issued for this purpose. (3)
...	...
10-40. Any discharge of wastewater requires a permit (WHG, Section 7a).	Verify that a permit has been obtained for the discharge of wastewater. (1)(3)
...	...
10-41. Solid substances may not be disposed of in surface waters (WHG, Section 26).	Verify that no solid substances are disposed of in surface waters. (3)
...	...
10-42. Wastewater from a residential type sewage system must meet certain quality standards before it can be discharged into a body of water (Rahmen-AbwasserVwV, Appendix 1).	Verify, if no other limit values have been set in the permit, that the wastewater to be discharged from residential type sewage systems meets the requirements listed in Table 10-7. (3)
...	...
10-43. Wastewater that constitutes the confluence of various streams of wastewater must meet certain quality standards before it can be discharged into a body of water (22. AbwasserVwV, Section 1.1).	Verify, if no other limit values have been set in the permit, that the wastewater to be discharged meets the requirements listed in Table 10-8. (3)
...	...

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COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-44. Wastewater from a water treatment facility and water from cooling or steam generation processes, must meet certain quality standards before it can be discharged into a body of water (31. AbwasserVwV, Section 1.1).	Verify, if no other limit values have been set in the permit to discharge, that the wastewater to be discharged from a water treatment facility or from a cooling or steam generation process meets the requirements listed in Table 10-9. (3)
...	...
10-45. Wastewater from scrubbers on incinerators must meet certain quality standards before it can be discharged (Rahmen-AbwasserVwV, Appendix 47).	Verify, if no other limit values have been set in the permit to discharge, that the wastewater from scrubbers on incinerators meets the requirements listed in Table 10-10, Chart A. (3) (NOTE: In the state of Rheinland-Pfalz, these limit values are presumably listed on the special permit required to discharge this type of wastewater into a communal wastewater treatment facility.)
...	...
10-46. Wastewater from scrubbers on hard coal incinerators must meet certain quality standards before it can be discharged into a body of water (Rahmen-AbwasserVwV, Appendix 47).	Verify, if no other limit values have been set in the permit to discharge, that the wastewater from scrubbers on hard coal incinerators meets the requirements listed in Table 10-10, Chart B. (3)
...	...
10-47. Wastewater from scrubbers on residential solid waste [Hausmuell] incinerators may not be discharged (Rahmen-AbwasserVwV, Appendix 47, Section 2.2.3).	Verify that no wastewater from scrubbers on waste incinerators is discharged. (3) Verify, if the residues from the scrubber of a waste incinerator cannot otherwise be disposed of properly and without harm, that substances in wastewater that is discharged do not exceed the limit values listed in Table 10-10, Chart C. (NOTE: In the state of Rheinland-Pfalz, these limit values are presumably listed on the special permit required to discharge this type of wastewater into a communal wastewater treatment facility.)
...	...

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COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-48. Wastewater resulting from the storage of residential type solid waste (seepage) must meet certain quality standards before it can be discharged into a body of water (Rahmen-AbwasserVwV, Appendix 51).	Verify, if no other limit values have been set in the permit to discharge, that wastewater resulting from the storage of solid waste meets the requirements listed in Table 10-11. (3) (NOTE: In the state of Rheinland-Pfalz, these limit values are presumably listed on the special permit required to discharge this type of wastewater into a communal wastewater treatment facility.)
...	...
10-49. Wastewater from areas where metal is worked on in any fashion, such as in machine shops, metal finishing shops [Gleitschleifanlagen], or paint shops, must meet certain quality standards before it can be discharged into a body of water (Rahmen-AbwasserVwV, Appendix 40).	Verify that the load of hazardous substances in wastewater is kept as low as possible by taking the following measures at the wastewater treatment facility: (3) - Treating the processing baths with suitable processes, such as membrane filtration, ion exchanger, electrolysis, and thermal processes, in order to be able to reuse processing baths as often as possible - Retaining substances contained in baths by taking suitable measures, such as transporting goods in such a manner that the dispersion of substances is inhibited; protecting against splashing; and optimizing the composition of baths - Multiple dre-use of rinse water by employing cascade rinsing, or closed-loop rinsing with ion exchangers - Recovering suitable substances contained in rinse baths and reintroducing them into processing baths - Recovering EDTA (ethylene diamine-tetracetic acid and its salts) from chemical copper baths and their rinse baths. Verify, if no other limit values have been set in the permit, that wastewater to be discharged from any kind of metal processing operation meets the requirements listed in Table 10-12. (NOTE: In the state of Rheinland-Pfalz, these limit values are presumably listed on the special permit required to discharge this type of wastewater into a communal wastewater treatment facility.)
...	...

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COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-50. Wastewater from areas where glass is worked on mechanically or chemically must meet certain quality standards before it can be discharged into a body of water (Rahmen-AbwasserVwV, Appendix 41).	Verify that wastewater to be discharged from any kind of glass processing operation contains no halogenated hydrocarbons, and, if no other limit values have been set in the permit, that the requirements listed in Table 10-13 are met. (3) Verify that wastewater from the mechanical treatment of glass is used in a closed-loop system. Verify that sludge from the treatment of glass (grinding or etching, as well as sludge containing silver or copper) is kept separate from wastewater, and that it is disposed of according to solid waste regulations. Verify, if scrubbers are used in the process of treating glass, that no wastewater is generated through the use of scrubbers. (NOTE: If discharge of wastewater from mechanical treatment of glass cannot be avoided, either because the water has diminished due to dispersion and splashing; or because the loop is being restarted after a complete shut-down, servicing, cleaning, and the like; or because a closed-loop system may not be feasible due to its adverse affect on machinery used to crack or grind glass, hazardous substances in wastewater may not exceed the limits in Table 10-13, Chart B.) (NOTE: In the state of Rheinland-Pfalz, these limit values are presumably listed on the special permit required to discharge this type of wastewater into a communal wastewater treatment facility.)
...	...
10-51. Wastewater from vehicle maintenance and cleaning facilities and from vehicle junking operations [Entkonservierung] may not contain organically bound halogenated compounds from detergents, fuel, cleaning or lubricating agents, or other auxiliary materials if it is to be discharged into a body of water (Rahmen-AbwasserVwV, Appendix 49, Section 2.1.1 and 2.2).	Verify that only those detergents, cleaning agents, or auxiliary materials are used that do not contain organically bound halogenated compounds. (3)
...	...

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COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-52. Installations must keep records of the contents of all detergents, fuel, cleaning or lubricating agents, or other auxiliary materials in use at their vehicle maintenance and cleaning facilities and their vehicle junking operations [Entkonservierung] (Rahmen-AbwasserVwV, Appendix 49, Section 2.3).	Verify that installations keep records of the contents of all detergents, fuel, cleaning or lubricating agents, or other auxiliary materials in use at their vehicle maintenance and cleaning facilities and their vehicle junking operations. (2)
...	...
10-53. The amount of hydrocarbons permissible in wastewater from vehicle maintenance or junking operations is regulated (Rahmen-AbwasserVwV, Appendix 49, Sections 2.2.1 and 2.4).	Verify that the amount of hydrocarbons in the wastewater does not exceed 20 mg/L after pretreatment. (2) (NOTE: This requirement applies only if more than 1 m^3 of wastewater is discharged per day.) (NOTE: This requirement is considered met if all of the following conditions are met: - the facility has an oil-water separator built according to DIN 1999 and a supplemental coalescer, or if it operates a comparable, licensed treatment facility - the oil-water separator (with its supplemental coalescer) functions in such a way that the residue of heating oil does not exceed a concentration of 5 mg/L, whenever a mixture of heating oil and water is used - the separator and its supplemental coalescer were dimensioned based on an accumulation of wastewater of 4 L/s during dry weather, and the equipment does not have to handle more wastewater than it was dimensioned to handle - any wastewater discharged into the wastewater treatment facility contains only detergents, cleaning agents, or unstable emulsions that have been shown not to impair the effectiveness of the facility with regard to hydrocarbon levels - the facility has a maintenance contract with specialists - the facility is monitored by the competent authority at least every 5 yr.) (NOTE: In the state of Rheinland-Pfalz, these requirements are presumably listed on the special permit required to discharge this type of wastewater into a communal wastewater treatment facility.)
...	...

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COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-54. Amalgam levels in wastewater from dental offices and clinics must be reduced and monitored before it may be mixed with wastewater from other health care related sources (Rahmen-AbwasserVwV, Appendix 50).	Verify that the drains for the dental treatment chairs are equipped with a licensed amalgam separator that reduces the amalgam content in wastewater by at least 95 percent. (2) Verify that, whenever wastewater is being enriched with amalgam, it is drained via an amalgam separator, and that the amount of such wastewater never exceeds the effective capacity of the amalgam separator. Verify that the amalgam separator is maintained and emptied according to the permit issued. Verify that written records are kept concerning the maintenance of the amalgam separator, and that receipts for the delivery of separated amalgam are included. (NOTE: In the state of Rheinland-Pfalz, these requirements are presumably listed on the special permit required to discharge this type of wastewater into a communal wastewater treatment facility.)
...	...
10-55. Wastewater from dry cleaning businesses must meet certain quality standards before it can be discharged into a body of water (Rahmen-AbwasserVwV, Appendix 52).	Verify that wastewater to be discharged from dry cleaning businesses meets the requirements listed in Table 10-14. (2) (NOTE: In the state of Rheinland-Pfalz, these requirements are presumably listed on the special permit required to discharge this type of wastewater into a communal wastewater treatment facility.) (NOTE: These requirements are considered met if the dry cleaning business includes a wastewater treatment facility that has been installed, operated, and maintained according to specifications.)
...	...
10-56. Laundry businesses must observe maximum permissible phosphate contents in their wash water (PHoechstMengV, Section 3).	Verify that the wash water of laundry businesses does not exceed the phosphate content given in Table 10-15. (2) (NOTE: This appears to apply even to laundromats where customers themselves operate the appliances and furnish their own detergents, since phosphate limits for residential or household use are clearly set apart. PHoechstMengV is somewhat ambiguous here.)
...	...

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COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-57. The polluting properties of wastewater may not exceed certain specified limits (AbwAG, Sections 3 (1), and 4 (1 and 2)).	Verify that the polluting properties of wastewater do not exceed the thresholds specified in the permit to discharge wastewater. (3) Verify, if no thresholds have been set in the permit to discharge wastewater, that the polluting properties of wastewater do not exceed the thresholds specified in Table 10-16. (NOTE: Except for stormwater runoff, wastewater charges are assessed according to the thresholds set in the permit to discharge wastewater. Consequently, if the polluting properties of discharged wastewater exceed the set thresholds, the discharging party will be penalized by higher wastewater charges. Conversely, if the polluting properties of wastewater are consistently lower than the prescribed limits, the discharging party may apply for a reduction of wastewater charges.)
...	...
10-58. Installations connected to a municipal sewage system that discharge stormwater runoff through that sewage system must estimate their pollution units for runoff in terms of the population on the installation (AbwAG, Section 7 (1)).	Verify that pollution units for runoff are estimated at the rate of 12 percent of the population connected to the municipal sewage system. (3) Verify that the competent authority is notified annually of the estimated pollution units of stormwater runoff on the installation. (3) (NOTE: In Rheinland-Pfalz, the population on 30 June of a given calendar year is used as a basis (LAbwAG, Section 9 (1)). Other states may use a different figure.)
...	...
10-59. Installations that discharge stormwater runoff through their own, self-contained sewage system, must estimate their pollution units for runoff in terms of the paved surfaces on the installation (AbwAG, Sections 7 (1), and 10 (1) (4)).	Verify that the pollution units for runoff are estimated at the rate of 18 per one hectare of paved surface. (3) Verify that the competent authority is notified annually of the estimated pollution units of stormwater runoff on the installation. (3)
...	...

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COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-60. Facilities that discharge 750 m^3 or more of wastewater per day must designate at least one person responsible for water protection (WHG, Section 21 a, b, and d).	Determine whether 750 m^3 or more of wastewater are discharged per day. (3) Verify that at least one person is designated to be responsible for water protection. Verify that the identity and duties of the person(s) responsible for water protection are spelled out in writing. Verify that the competent authority is notified of the designation. (NOTE: In Rheinland-Pfalz, the person responsible for water protection ordinarily is the director or operator of a wastewater treatment facility (LWG, Section 58).)
...	...
10-61. Person(s) responsible for water protection at a wastewater facility are required to perform specific duties (WHG, Section 21b).	Verify that any person responsible for water protection at a wastewater facility: (3) - supervises the operation and maintenance of the wastewater facility - measures the quantity and characteristics of wastewater - maintains records of measurements and tests - notifies the user in case of deficiencies. (NOTE: What "records" are is not spelled out in the WHG. For Rheinland-Pfalz, details are given in this protocol in the state section for wastewater discharge.) Verify that the person responsible for water protection at a wastewater facility towards works the application of suitable treatment processes, including the proper utilization or disposal of residues from wastewater treatment. Verify that the person responsible for water protection at a wastewater facility works towards the development and introduction of intra-plant procedures for avoiding or reducing the different types and the amount of wastewater. Verify that the person responsible for water protection at a wastewater facility educates the plant staff with respect to the impact that the plant has on water, and about the equipment and measures for preventing that impact. Verify that the person responsible for water protection at a wastewater facility submits a report to the user once per year, detailing all measures taken or planned as they relate to the duties spelled out above.
...	...

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COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-62. The competent authority must be notified, and work must cease when groundwater is accidentally tapped during excavation for a development project (LWG, Section 42 (2).	Verify, whenever groundwater is accidentally tapped, that the competent authority is notified, and that work is stopped for the time being. (3) (NOTE: If the competent authority has not declared within 2 mo that the project must be abandoned indefinitely or that certain conditions or restrictions must be observed, then the project may continue to proceed as planned.)
...	...
RHEINLAND-PFALZ WATER **Surface Water**	
10-63. Installations must maintain both standing and artificially created running waters of Class III on their property (LWG, Sections 4 (2) and 63 (4)).	Determine whether and which bodies of water on the installation are subject to maintenance requirements. (1)(2)(4) Verify that both standing and artificially created running waters of Class III are maintained on the installation. (NOTE: This requirement does not apply to water reservoirs of regional significance; they are maintained by the state.)
...	...
10-64. Any construction or alteration of facilities in or near surface waters is subject to regulation (LWG, Section 76 (1)).	Verify that a permit has been obtained for the construction or alteration of a facility within 40 m of the shoreline of Class I and II waters. (1)(2)(4) Verify that a permit has been obtained for the construction or alteration of a facility within 10 m of the shoreline of Class III waters.
...	...
10-65. Areas that have been designated as flood plains are subject to regulation (LWG, Sections 89 and 90).	Determine whether any area on the installation has been designated as flood plain. (1)(2)(4) Verify that any particular obligation set forth in the document designating the flood plain has been met. Verify that none of the following activities occur on the flood plain, except within the framework of necessary measures to maintain waters or levees: - altering the surface by accumulating or removing soil - constructing, altering, or removing facilities - storing substances or disposing of them. Verify that a permit is on hand for planting trees, shrubs, or vines on the flood plain.
...	...

(1) BCE (Environmental Planning) (2) BEE (Bioenvironmental Engineering) (3) Wastewater Treatment Plant Superintendent (4) BCE (Natural Resources Planner)

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-66. An installation whose property adjoins a levee must refrain from activities that undermine the maintenance and safety of the levee (LWG, Section 87 (2)).	Verify that no activities undermining the maintenance or safety of a levee occur on or near a levee that may be located next to the installation (i.e. ATV's, dirt bikes, etc.). (1)(2)(4)
...	...
10-67. Areas that are known to be threatened by water must be properly prepared to deal with emergencies (LWG, Section 91).	Determine whether there are areas on the installation that are regularly threatened by flooding or otherwise subject to danger caused by water. (1)(2)(4) Verify that the installation's fire department or other organization is technically equipped to handle water emergencies and to provide assistance in times of such emergencies. (NOTE: Local communities in collaboration with the state are responsible for monitoring and securing levees and other flood protection facilities, and for providing emergency assistance. However, it appears that an installation should be technically prepared for water threats if there are areas on the installation that are prone to flooding.)
...	...
RHEINLAND-PFALZ DRINKING WATER **Supply Systems**	
10-68. Water supply systems, including water treatment facilities, must conform to prescribed technical specifications or codes (LWG, Sections 48).	Verify that water supply systems and water treatment facilities on the installation conform to applicable technical specifications or codes. (1)(2)(4) Verify, if any portion of the water supply system does not meet technical specifications or codes, that remedial measures are taken immediately.
...	...

(1) BCE (Environmental Planning) (2) BEE (Bioenvironmental Engineering) (3) Wastewater Treatment Plant Superintendent (4) BCE (Natural Resources Planner)

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-69. The construction, significant alteration, and operation of water treatment facilities and storage tanks (water towers) is subject to regulation (LWG, Section 47).	Verify that the construction, significant alteration, and operation of water treatment facilities and storage tanks has been approved by the competent authority. (1)(2)(4) (NOTE: The regulation mentions approval [Genehmigung] as a requirement, but does not specify whether a permit [Erlaubnis] or license [Bewilligung] is necessary in this context.) (NOTE: In the case of a significant alteration of an existing facility, the project can be assumed to be approved if the competent authority has not responded with a notification to the contrary within 8 weeks of the application.) (NOTE: Construction must be begun within 2 yr, and completed within 5 yr, from the date when the project was approved. An extension is possible, but new requirements may have to be met.)
...	...
10-70. Operators of a water supply system must monitor the quality of drinking water (LWG, Section 49 (1)).	Verify that the quality of drinking water meets prescribed requirements. (1)(2)(4) (NOTE: Unless other requirements are set that should be listed on the permit, applicable requirements are listed in the Federal section of this protocol.)
...	...
10-71. The transfer of a water supply system, including its various facilities, to another party must be approved (LWG, Section 46a (1)).	Verify that the transfer of a water supply system to another party has been approved by the regional government [Bezirksregierung]. (1)(2)(4) (NOTE: Transfer may mean the sale, the transfer of responsibility for the operation, or the permission to another party to use any part of the supply system.)
...	...

(1) BCE (Environmental Planning) (2) BEE (Bioenvironmental Engineering) (3) Wastewater Treatment Plant Superintendent (4) BCE (Natural Resources Planner)

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
RHEINLAND-PFALZ WASTEWATER **Treatment**	
10-72. Long-range plans must be developed for wastewater situations that do not meet applicable specifications or codes (LWG, Section 52 (5)).	Verify that a long-range plan for wastewater disposal [Abwasserbeseitigungskonzept] is developed and submitted to the higher-level competent authority, detailing the following: (3) - the current status of the wastewater treatment facility, and the affected area serviced by that facility - the range of measures that must be taken to meet the requirements - a timetable specifying at which rate which measures are projected to be taken - an estimate of the costs involved. Verify that the long-range plan is continually fine-tuned, and submitted to the higher-level authority every 5 yr.
...	...
10-73. The construction, significant alteration, and operation of certain wastewater treatment facilities must be approved (LWG, Section 54).	Verify that the construction, significant alteration, and operation of any wastewater treatment facility that treats more than 8 m^3 of wastewater per day has been approved by the competent authority. (3) (NOTE: This approval [Genehmigung] is given by the competent authority that has jurisdiction for issuing the permit to discharge wastewater.) (NOTE: The construction must begin within 2 yr, and be completed within 5 yr, after the date when the project was approved. An extension is possible, but new requirements may have to be met.)
...	...
RHEINLAND-PFALZ WASTEWATER **Discharge**	
10-74. A special permit is required to discharge wastewater into a public wastewater treatment facility from certain points of origin where hazardous substances are generated (LWG, Section 55).	Verify that a special permit is on hand to discharge certain types wastewater into a public wastewater treatment facility. (3) (NOTE: For these points of origin, specific limit values exist for particular substances. Details are given in the appropriate sections of the protocol pertaining to Federal regulations.)
...	...

(1) BCE (Environmental Planning) (2) BEE (Bioenvironmental Engineering) (3) Wastewater Treatment Plant Superintendent (4) BCE (Natural Resources Planner)

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-75. A special permit is required if certain substances harmful to water are to be discharged into public wastewater facilities, unless specific threshold quantities are not exceeded. (Landesverordnung ueber die Genehmigungspflicht fuer das Einleiten wassergefaehrdender Stoffe in eine Abwasseranlage und ihre Ueberwachung, Section 1(1)).	Verify, if the threshold quantities listed in Table 10-17 are exceeded, that permits are on hand when the substances listed are to be discharged into public wastewater facilities. (3)
...	...
10-76. Facilities that are required to be permitted for the discharge of the substances listed in Table 10-17 must test their wastewater or have it tested monthly (Landesverordnung ueber die Genehmigungspflicht fuer das Einleiten wassergefaehrdender Stoffe in eine Abwasseranlage und ihre Ueberwachung, Section 2(1)).	Verify that facilities that are required to be permitted for the discharge of the substances listed in Table 10-17 test their wastewater or have it tested monthly. (3)
...	...
10-77. Operators of a wastewater treatment facility must monitor the facility and its operation (LWG, Section 57 (1)).	Verify that the condition, the operation, and the treatment capacity (effectiveness) of the treatment facility is monitored. (3) Verify that both the volume and properties of wastewater are monitored. (NOTE: Exactly what monitoring means for small wastewater treatment facilities that treat less than 8 m^3/day, is not spelled out. In those cases, unless other requirements are listed on the permit to discharge wastewater, it appears that monitoring pertains to parameters listed in the applicable Federal section of this protocol.)
...	...

(1) BCE (Environmental Planning) (2) BEE (Bioenvironmental Engineering) (3) Wastewater Treatment Plant Superintendent (4) BCE (Natural Resources Planner)

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-78. The monitoring of wastewater treatment facilities that treat more than 8 m^3 of wastewater per day is regulated (EUeVOA, Sections 1 and 2).	Verify that the wastewater flowing into the treatment facility is monitored with respect to volume and the parameters listed on the permit. (3) Verify that the wastewater flowing out of the treatment facility is monitored with respect to volume and the parameters listed on the permit. Verify that any other parameters needed to operate the wastewater treatment facility are monitored. Verify that the scope and frequency of monitoring at a wastewater treatment facility conforms to the following prescribed schedules: - for wastewater from points of origin where metal is worked on - Table 10-18 - for wastewater from printing and photo chemical operations, and from laboratories - Table 10-19 - for all other kinds of wastewater - Table 10-20.
...	...
10-79. Wastewater treatment facilities that treat more than 8 m^3 of wastewater per day must keep certain records (EUeVOA, Section 4).	Verify that records are kept at the wastewater treatment facility containing the following information: (3) - the results of the monitoring process - the technical processes used for the monitoring process - any troubles that have occurred in the operation of the facility. Verify that the records are checked and signed at least once per month by the director or operator of the facility, independently of the tasks of the person responsible for water protection. Verify that records of the wastewater treatment facility are kept for 5 yr.
...	...

(1) BCE (Environmental Planning) (2) BEE (Bioenvironmental Engineering) (3) Wastewater Treatment Plant Superintendent (4) BCE (Natural Resources Planner)

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-80. Wastewater treatment facilities that treat more than 8 m^3 of wastewater per day must file a self-monitoring report (i.e., report on the monitoring process) to the competent authority on a regular basis (EUeVOA, Section 5).	Verify that a report on the monitoring process at the wastewater treatment facility (self-monitoring report) is filed with the competent authority in which the results of the monitoring process are summarized and analyzed. (3) Verify that the self-monitoring report contains at least the following information regarding the wastewater flowing into the treatment facility: - the volume of wastewater that flowed into the treatment facility and the mean concentration of the parameters subject to monitoring, given per month - the highest concentrations of contaminants and groups of contaminants and the individual wastewater streams in which they were detected flowing into the treament facility. Verify that the report is filed with the competent authority at the following intervals: - every 6 mo - for wastewater treatment facilities constructed to handle more than 300 kg/day of wastewater in a state of biochemical oxygen demand (BOD_5) (raw) - yearly - for all other wastewater treatment facilities.
...	...
10-81. Installations must notify the competent authority of the estimated pollution units for stormwater runoff according to a prescribed schedule and form (LAbwAG, Section 12).	Verify that the competent authority is notified on an official state form of the estimates of pollution units for stormwater runoff in a given year by 31 March of the following year. (3)
...	...
10-82. Motor vehicles may be filled with gasoline and/or oil or cleaned using flammable liquids only in garages or parking areas where spilled liquids cannot enter the ground or wastewater facilities (Garagenverordnung, Section 23(3)).	Verify that motor vehicles are filled with gasoline and/or oil or cleaned using flammable liquids only in garages or parking areas where spilled liquids cannot enter the ground or wastewater facilities. (3)
...	...
10-83. Oil/water separators are to be emptied and cleaned regularly (Garagenverordnung, Section 23(3)).	Verify that oil/water separators are emptied and cleaned regularly. (3)

(1) BCE (Environmental Planning) (2) BEE (Bioenvironmental Engineering) (3) Wastewater Treatment Plant Superintendent (4) BCE (Natural Resources Planner)

Table 10-1

Limit Values for Chemical Substances in Drinking Water

Chart I (Periodic Tests)

Running Number	Name	Limit Value (mg/L)	Given as	Permissible Margin of Error (± mg/L)
a	b	c	d	f
1*	arsenic	0.04	As	0.015
2	lead	0.04	Pb	0.02
3	cadmium	0.005	Cd	0.002
4	chromium	0.05	Cr	0.01
5	cyanide	0.05	CN^-	0.01
6	fluoride	1.5	F^-	0.2
7	nickel	0.05	Ni	0.01
8	nitrate	50	NO_3^-	2
9	nitrite	0.1	NO_2^-	0.02
10	mercury	0.001	Hg	0.0005
11	polycyclic aromatic hydrocarbons	in total 0.0002	C	0.00004
	-fluoranthane			
	-benzo-(b)-fluoranthene			
	-benzo-(k)-fluoranthene			
	-benzo-(a)-pyrene			
	-benzo-(ghi)-perylene			
	-indeno-(1,2,3-cd)-pyrene			
12	organic chlorine compounds	in total 0.01	-	0.004
	-1,1,1-tri-chloroethane			
	-tri-chloroethylene			
	-tetra-chloroethylene			
	-dichloromethane	0.003	CCl_4	0.001

NOTE: * Running Number 1 of Table 10-1 applies until 31 December 1995. On 1 January 1996, the following values for arsenic take effect: limit value (column c): 0.01; permissible margin of error (column f): 0.015.

Table 10-1 (continued)

Chart II (Special Tests)

Running Number	Name	Limit Value (mg/L)	Given as	Permissible Margin of Error (± mg/L)
a	b	c	d	f
13	a) organic chemical substances used as herbicides and pesticides, including their toxic main breakdown products	individual substance 0.0001 in total 0.00005	-	0.00005 0.0002
	b) polychlorinated, polybromated biphenyls and terphenyls			
14	antimony	0.01	Sb	0.002
15	selenium	0.01	Se	0.002

Table 10-2

Parameters and Limit Values for Determining the Quality of Drinking Water

Chart I: Sensory Parameters

Running Number	Name	Limit Value	Given as	Permissible Margin of Error	Specified Procedure/Notes
a	b	c	d	e	f
1	color * (spectral absorption coefficient Hg 436 nm)	0.5 m^{-1}	-	-	determination of the spectral absorption coefficient with spectral photometer or filter photometer
2	opacity *	1.5 unit of opacity(?) [Truebungseinheit] /Formazin(?)	-	-	determination of the spectral dispersion coefficient
3	odor threshold	2 at i2 °C 3 at 25 °C	-	-	gradual dilution with odorless water and examination for odor

NOTE: * Brief excesses are to be disregarded.

Table 10-2 (continued)

Chart II: Physico-chemical Parameters

Running Number	Name	Limit Value	Given as	Permissible Margin of Error	Specified Procedure/Notes
a	b	c	d	e	f
4	temperature	25 °C	-	± 1 °C	limit value does not apply for drinking water that has been heated
5	pH-value	no less than 6.5 and no more than 9.5 a) in connection with materials containing metall or cement, except for passive steel, the pH-value of the dispensed water, within the pH-range of 6.5-8.0, may not be lower than the pH-value of the calcium carbonate saturation; b) in connection with materials containing fiber cement, the pH-value of of the dispensed water, within the pH-range of 6.5-9.5, may not be lower than the pH-value of the calcium carbonate carbonate saturation	-	± 0.1	electrometric measuring with glass electrode; for water supply systems dispensing a maximum of 1000 m**3 per year, photometric measuring is also admissible; the pH-value of the calcium carbonate saturation is determined through calculation; variances of the pH-value of the water below the pH-value of the calcium carbonate saturation are disregarded up to 0.2 pH-units
6	conductivity	2000 µS cm^{-1}	-	± 100 µS cm^{-1}	electrometric measuring
7	oxidizablity	5 mg/L	O_2	-	volumetric determination of oxidizability through potassium permanganate/ consumption of potassium permanganate

Chart III: Limit Values for Chemical Substances

Running Number	Name	Limit Value mg/L	Given as	Equivalent to approx. mmol/m^3	Permissible Margin of Error ± mg/L	Specified Procedure/ Notes
a	b	c	d	e	f	g
8	aluminum	0.2	Al	7.5	0.04	
9	ammonium	0.5	NH_4+	30	0.1	variances due to geological conditions are disregarded up to a limit value of 30 mg/L
10	barium	1	Ba	7	0.2	
11	boron	1	B	90	0.2	
12	calcium	400	Ca	10,000	40	
13	chloride	250	Cl	7000	25	
14	iron	0.2	Fe	3.5	0.01	
15	potassium	12	K	300	0.5	variances due to geological conditions are disregarded up to a limit value of 50 mg/L
16	Kjeldahl nitrogen	1	N	71		
17	magnesium	50	Mg	2050	2	variances due to geological conditions are disregarded up to a limit value of 50 mg/L
18	manganese	0.05	Mn	0.9	0.01	
19	sodium	150	Na	6500	6	
20	phenols	0.0005	phenol C_6H_5OH	0.005		-except natural phenols that do not react with chlorine; -is met if the limit value of Appendix 4, Number 3, "odor threshold", is met
21	phosphorus	6.7	PO_4^{3-}	70	0.1	limit value corresponds to 5 mg/L P_2O_5

Table 10-2 (continued)

Running Number	Name	Limit Value mg/L	Given as	Equivalent to approx. mmol/m^3	Permissible Margin of Error ± mg/L	Specified Procedure/ Notes
a	b	c	d	e	f	g
22	silver	0.01	Ag	0.1	0.004	when silver or silver compounds are used for the treatment of drinking water, Appendix 3, Number 4 applies
23	sulfate	240	SO_4^{2-}	2500	5	variances due to geological conditions are disregarded up to a limit value of 500 mg/L
24	dissolved or emulsified carbohydrates; mineral oils	0.01			0.005	
25	substances extractable with chloroform	1	waste steam residue			is met if the limit value of Appendix 4, Number 7 is met
26	surface-active agents a)anionic	0.2	substances that react with methylene blue		0.1	a)determination of anionic surface-active agents through methylene blue compared with dodecyl benzenesulfonic acid methyl ester as standard
	b)nonionic		bismuth active substance			b)determination of nonionic surface-active agents through modified Dragendorff's reagents compared with nonyl phenol decaethoxylate

Table 10-3

Standard Values for Chemical Substances in Drinking Water

Running Number	Name	Standard Value (mg/L)	Given as Error (± mg/L)	Permissible Margin of Notes	Specified Procedure/
a	b	c	d	f	g
1	copper	3	Cu	0.3	The standard value applies after a stagnation of 12 h. 2 yr after the installation of copper pipes, the standard value applies regardless of stagnation.
2	zinc	5	Zn	0.5	The standard value applies after a stagnation of 12 h. 2 yr after the installation of galvanized steel pipes, the standard value applies regardless of stagnation.

Table 10-4

Additives Approved for the Treatment of Drinking Water

Running Number	Name	European Community Number	Intended Purpose of all Substances Listed under the same Running Number	Permissible Addition (mg/L)	Limit Value after Completion of Treatment[1]) (mg/L)	Given as	Permissible Margin of Error (+- mg/L)	Reaction Products
a	b	c	d	e	g	h	k	l
1	chlorine sodium hypochlorite calcium hypochlorite magnesium hypochlorite chlorinated lime	925	disinfection	1.2 [2]	0.3 [2] 0.01	free chlorine trihalogen-methane	0.05 0.005	 trihalogen-methanes [2 3]
2	chlorodioxide	926	disinfection	0.4 -	0.2 0.2	ClO_2^- ClO_2	0.02 0.05	chlorite
3	ozone		disinfection oxidation	10	0.05 0.01	O_3 trihalogen-methanes	0.03 0.005	trihalogen-methanes [3]
4	silver silver chloride sodium silver chloride complex silver sulfate	E174	preservation; only for nonsystematic use in an exception		0.08	Ag	0.01	
5	hydrogen peroxide sodium peroxodisulfate potassium monopersulfate		oxidation	17	0.1	H_2O_2	0.05	
6	potassium permanganate		oxidation					
7	oxygen		oxidation, oxygen enrichment					
8	sulphur dioxide sodium sulfite calcium sulfite	E220 E221 E226	reduction	5	2	SO_3^{2-}	0.2	

Table 10-4 (continued)

Running Number	Name	European Community Number	Intended Purpose of all Substances Listed under the same Running Number	Permissible Addition (mg/L)	Limit Value after Completion of Treatment[1]) (mg/L)	Given as	Permissible Margin of Error (+- mg/L)	Reaction Products
a	b	c	d	e	g	h	k	l
9	sodium thiosulfate		reduction	6.7	2.8	$S_2O_3^{2-}$	0.24	
10a	sodium orthophosphate potassium orthophosphate calcium orthophosphate sodium- and potassium diphosphate sodium- and potassium triphosphate sodium- and potassium polyphosphate sodium-calcium polyphosphate calcium polyphosphate	E339 E340 E341 E450a E450b E450c 543 544	inhibition of corrosion inhibition of stone deposits					
10b	sodium silicates in combination with substances under 10a or sodium hydroxide or sodium carbonate or sodium hydrogen carbonate	550 524 500 500	inhibition of corrosion		40	SiO_2	0.4	
11	calcium carbonate calcium oxide calcium hydroxide calcium sulphate calcium chloride half-burned dolomite magnesium carbonate magnesium oxide magnesium hydroxide magnesium chloride sodium carbonate sodium hydrogen carbonate sodium hydroxide sodium hydrogen sulphate hydrochloric acid sulphuric acid	E170 529 526 516 509 504 530 528 511 500 500 524 514 507 513	adjustment of pH-value, salt content, calcium level, acidity; withdrawal of selenium, nitrate, sulfate, humantes; regeneration of sorbents					

Table 10-4 (continued)

Running Number	Name	European Community Number	Intended Purpose of all Substances Listed under the same Running Number	Permissible Addition (mg/L)	Limit Value after Completion of Treatment[1]) (mg/L)	Given as	Permissible Margin of Error (+- mg/L)	Reaction Products
a	b	c	d	e	g	h	k	l
12	magnesium as protective anode		cathodic corrosion protection					

NOTE:

* Drinking water may also be treated with additives that do not require licensing, provided that these additives are removed completely or to such an extent that they or their conversion products remain in drinking water only as technically unavoidable and technologically ineffective residues, and only in concentrations which are harmless to health and unobjectionable to smell and taste.

1 Including the content of these substances before treatment and from other treatment steps.

2 The highest permissible addition may be increased to 6 mg/L if microbiological requirements cannot be met otherwise, as specified in Section 1, or if the disinfection process is temporarily affected by ammonium. In this case, the limit value for free chlorine in treated drinking water is 0.6 mg/L; the limit value for trihalogen methanes is 0.025 mg/L, with a permissible margin of error of plus or minus 0.01 mg/L.

3 Chloroform, monobromium dichloromethane, dibromo monochloromethane, bromoform.

Table 10-5

Scope and Frequency of Tests Required for Drinking Water

NOTE: It appears that there is a typo in the German table, citing Section 11 of the text (TrinkwV) wherever the correct reference should be Section 13. The following table accounts for corrected references.)

	Tests for Monitoring Disinfection		Regular Tests		Periodic Tests		Special Tests	
Amount of Drinking Water Dispensed	Number (Frequency) of Tests	Scope of Tests	Number (Frequency) of Tests	Scope of Tests	Number (Frequency) of Tests	Scope of Tests	Number (Frequency) of Tests	Scope of Tests
maximum of 1,000 m^3 per year	once per day or according to Section 13, Paragraph (3)	chlorine or chloro-dioxide [2]	-	-	once per year or according to Section 13, Paragraphs (2) and (3)	odor (quality); opacity (appearance); conductivity [2]; substances according to Appendix 2, Section I, and Appendix 3; E. coli; coliform bacteria; number of colonies	whenever required according to Section 10, Paragraph (2), or Section 13	substances according to Appendix 2, Section II; substances and parameters according to Appendix 4; substances, parameters, and micro organisms determined by the competent authority according to Section 10, Paragraph (2), or Section 13
					once per month or according to Section 13, Paragraph (3)	pH-value [2]		

	Tests for Monitoring Disinfection		Regular Tests		Periodic Tests		Special Tests	
Amount of Drinking Water Dispensed	Number (Frequency) of Tests	Scope of Tests	Number (Frequency) of Tests	Scope of Tests	Number (Frequency) of Tests	Scope of Tests	Number (Frequency) of Tests	Scope of Tests
maximum of 1,000 m^3 per year	once per day	chlorine or chloro-dioxide [2]	once per 15,000 m^3 dispensed; once per 30,000 m^3 dispensed if the water is not disinfected, or if the content of disinfectants is recorded continuously	odor (quality); opacity (appearance); conductivity [2]; chlorine or chloro-dioxide [2]; E. coli; coliform bacteria; number of colonies	once per year or according to Section 13, Paragraph (2)	odor (quality); opacity (appearance); conductivity [2]; substances according to Appendix 2, Section I, and Appendix 3; E. coli; coliform bacteria; number of colonies	whenever required according to Section 10, Paragraph (2), or Section 13	substances according to Appendix 2, Section II; substances and parameters according to Appendix 4; substances, parameters, and micro organisms *determined by the* competent authority according to Section 10, Paragraph (2), or Section 13
					once per week	pH-value [2]		

Table 10-5 (continued)

	Tests for Monitoring Disinfection		Regular Tests		Periodic Tests		Special Tests	
Amount of Drinking Water Dispensed	Number (Frequency) of Tests	Scope of Tests	Number (Frequency) of Tests	Scope of Tests	Number (Frequency) of Tests	Scope of Tests	Number (Frequency) of Tests	Scope of Tests
more than 1,000,000 m [3]	once per day	chlorine or chloro-dioxide [2]	once per 15,000 m [3] dispensed; once per 30,000 m [3] dispensed if the water is not disin-fected, or if the content of disinfectants is recorded continuously	odor (quality); opacity (appearance); conductivity [2]; chlorine or chloro-dioxide [2]; E. coli; coliform bacteria; number of colonies	once per year or according to Section 13, Paragraph (2)	odor (quality); opacity (appearance); conductivity [2]; substances according to Appendix 2, Section I, and Appendix 3; E. coli; coliform bacteria; number of colonies	whenever required according to Section 10, Paragraph (2), or Section 13	substances according to Appendix 2, Section II; substances and parameters according to Appendix 4; substances, parameters, and micro organisms determined by the competent authority according to Section 10, Paragraph (2), or Section 13
					once per week	pH-value [2]		

Table 10-5 (continued)

Note:

[1] For water used by food processing operations, the competent authority may not permit longer than yearly intervals between tests.

[2] Individual test dropped when recorded continuously.

[3] If samples in this category must be tested daily and tests have not yielded objectionable results within 4 years, then the competent authority may permit to reduce the number of daily samples to 1/3 of the required number.

Table 10-6

Delivery Note for Sewage Sludge

Wastewater Treatment Facility

Name and Address of the Operator:
_____
_____
_____

Location:_____
Date:_____
Tel:_____
Fax:_____

Delivery Note

This Delivery Note must be kept as a record at the wastewater treatment facility for 30 yr.

Name and Address of the User:

_____
_____

In the month/s of _____, 19__, we will transfer _____ m^3 of sewage sludge containing at least _____% of dry substance, corresponding to the amount of _____ metric tons of dry matter, on lot number _____, district _____ of the land register, having the size of _____ hectares, with the following intent[1]:

___ disposal
___ application
___ application through the following third party:_____
(include name and address)

Current use of the land:_____

Soil tests, dated from _____ (Analysis # _____)

___ did not show excesses for the permissible content of heavy metals.
___ did show partial excesses for the permissible content of heavy metals.

The sewage sludge was treated in the following manner:

___ biologically ___ chemically ___ thermally ___ through long-term storage
___ decontaminated ___ treated otherwise: _____

Tests of the sewage sludge, dated from _____ (Analysis #_____)

___ did not show excesses for permissible pollutants.
___ did show partial excesses for permissible pollutants.

The tests of the soil and sewage sludge yielded the following results:

1. Soil:

pH value _____

Type of soil[2] _____

The soil contains on the average:

Given as mg/100 g of dry sludge matter:	
phosphate (P_2O_5):	
potassium oxide (K_2O):	
magnesium (Mg):	
Given as mg/kg of dry sludge matter:	
	Limit Values
lead:_____	100
cadmium:_____	1.5 (1 for 'light soils')
chromium:_____	100
copper:_____	60
nickel:_____	50
mercury:_____	1
zinc:_____	200 (150 for 'light soils')

2. Sewage sludge:

The sewage sludge has the following pH value _____

Table 10-6 (continued)

The sewage sludge contains on the average:

		% of nutrients in fresh sludge	% of nutrients in dry sludge matter
organic substances: total nitrogen (N): ammonia nitrogen (NH_4-N): phosphate (P_2O_5): potassium oxide (K_2O): calcium oxide (CaO): magnesium oxide (MgO):			
Given as mg/kg of dry sludge matter:			
Limit Values			
lead: cadmium: chromium: copper: nickel: mercury: zink: AOX:		900 10 (5 for 'light soils') 900 800 200 8 2500 (2000 for 'light soils') 500	
PCBs Number[3]:		Limit Values	
28: 52: 101:	138: 153: 180:	0.2 mg of PCB per kg of dry sludge matter for each component	
Given as nanograms TE per kg of dry sludge matter:			
PCDDs, PCDFs:		100 nanograms TE per kg of dry sludge matter	

I herewith confirm that the sewage sludge from our wastewater treatment facility, with the properties stated above, may be used according to the Ordinance on Sewage Sludge from April 15, 1992 (BGBl. I, p. 912), and in accordance with the guidelines for the use of sewage sludge in agriculture, issued by the highest competent authority in Rheinland-Pfalz on _____.

_____

(Signature of the Operator of the Wastewater Treatment Facility)
authority

Table 10-6 (continued)

Confirmation of the Transfer of Sewage Sludge

On this day we have transferred _____ m^3 of sewage sludge with at least _____% of dry substance, corresponding to _____ metric tons of dry sludge matter, in accordance with the above stated information.

_____

(Signature of the Operator of the Wastewater Treatment Facility)

Confirmation of the Application of Sewage Sludge

On this day I have applied the sewage sludge received from _____ on _____ according to the above stated information. The maximum permissible amount of sewage sludge to be applied to the land has not been exceeded.

_____

(Signature of the Recipient/Farmer)

(NOTE: In addition to the original, 6 copies must be made of this form.)

[1]Apparently at this point the operator of the wastewater treatment must indicate whether he is simply turning over the sewage sludge to someone else, or applying it by himself, or whether he has it applied through a third party. The difference between the first and third option is not fully clear, but seems to be a liability issue.

[2]The type of soil must be specified here: Certains soils are designated as 'light soil' or are otherwise subject to specific regulations which restrict the properties of sewage sludge that my be applied there. The installation should expect the landowner who takes the sludge to know the particular requirements for the area involved.

[3]Components of PCBs are numbered systematically according to the rules of the International Union for Pure and Applied Chemistry (IUPAC).

Table 10-7

Quality Requirements for Wastewater from Residential Type Wastewater Treatment Facilities Before Discharge into Bodies of Water

Discharge of wastewater into bodies of water must occur according to generally accepted technical standards. Depending on the classification of the wastewater treatment facility, limit values for substances in residential type wastewater vary.

Facilities that treat residential type wastewater are classified by the volume of wastewater processed. Ordinarily, this is calculated as the amount of untreated or raw wastewater in a biologically anaerobic state after 5 days, given as BOD_5 (raw). If only the sediments of used water are available for calculation, the figures apply to the amount of sediment in a biologically anaerobic state after 5 days, given as BOD_5 (sed). Wastewater treatment facilities are classified as follows:

Class 1	less than 60 kg/d BOD_5 (raw)	or less than 40 kg/d BOD_5 (sed)
Class 2	60-300 kg/d BOD_5 (raw)	or 40-200 kg/d BOD_5 (sed)
Class 3	300-1200 kg/d BOD_5 (raw)	or 200-800 kg/d BOD_5 (sed)
Class 4	1200-6000 kg/d BOD_5 (raw)	or 800-4000 kg/d BOD_5 (sed)
Class 5	6000 kg/d BOD_5 or more (raw)	or 4000 kg/d BOD_5 (sed)

The following limit values must be observed for various sizes of wastewater treatment facilities before wastewater can be discharged.

Classification of wastewater treatment facility, by size	Chemical anaerobic state (COD), given in mg/L	Biochemical anaerobic state after 5 Days (BOD_5), given in mg/L	Ammonium nitrate) (NH_4-N), given in mg/L	Total phosphorus (Pges), given in mL/L
Qualified sample or 2 h mixed sample				
a	b	c	d	e
Class 1	150	40	-	-
Class 2	110	25	-	-
Class 3	90	20	10	-
Class 4	90	20	20	2
Class 5	75	15	10	1

(NOTE: *This requirement applies to a wastewater temperature of 12 °C and higher in the biological digester of the water treatment facility. Instead of a temperature of 12 °C, the time between 1 May and 31 October may be considered.)

(NOTE: If samples from treatment ponds where water remains for 24 h or more is visibly discolored by algae, the following values for the anaerobic state of the water apply: limit values for COD (column b) are reduced by 15 mg/L; limit values for BOD_5 (column c) are reduced by 5 mg/L.)

Table 10-7 (continued)

(NOTE: These values are considered met if four out of the five most recent tests conducted by the competent authority, within the last 3 yr, do not exceed the prescribed limits, and no single result exceeds the prescribed limit by 100 percent.)

(NOTE: Wastewater treatment facilities of Classes 3, 4, and 5 must treat wastewater in a specific denitrification process before the wastewater may be discharged.)

Table 10-8

Minimum Requirements for Mixed Wastewater Before Discharge

(NOTE: The provision to which this table pertains, 22. *AbwasserVwV*, was drawn up in 1982. Whether it still applies has been impossible to determine from outside Germany.)

Unless other provisions apply to specific types of wastewater, the following minimum requirements must be met before mixed wastewater (the confluence of various streams of wastewater) may be discharged:

Settleable substances	0.5 mL/L of the sample
Chemical oxygen demand (COD)	reduction of the chemical oxygen demand (COD) by at least 75%[1])

Other parameters: Certain portions of wastewater streams may be subject to additional requirements, due to the particular origin of the wastewater. Those requirements must also be observed.

(NOTE: [1]The reduction of the chemical oxygen demand (COD) is calculated by comparing the chemical oxygen demand of wastewater that enters the central treatment facility (in-flow) to that which leaves the central treatment facility (out-flow) within a 24 h time span. The separate treatment of certain wastewater streams may be credited toward the 75% reduction.)

(NOTE: If the limits for settleable substances have been exceeded in one sample, but the dry mass of the substances that can be filtered out does not exceed 50 mL/L, then the actual reading of that sample may be replaced by 0.5 mL/L for calculating the mean.)

(NOTE: These values are considered met if the mean result of the five most recent tests conducted by the competent authority within the last 3 yr does not exceed the prescribed limits. If specific limits have been set for toxicity to fish, those limits are considered met if four out of the five most recent tests conducted by the competent authority within the last three years comply with requirements.)

Table 10-9

Minimum Requirements for Wastewater from Water Treatment Facilities and Cooling Systems Before Discharge

(NOTE: The provision to which this table pertains, *31. AbwasserVwV*, was drawn up in 1983. Whether it still applies has been impossible to determine from outside Germany.)

A. Limit values for wastewater from water treatment facilities:

Settleable substances: 0.3 mL/L of the sample

(NOTE: If the wastewater comes from a facility that treats water from a running body of water, then this requirement applies only if the quantity of wastewater discharged (Q) is less than the quantity of mean water (MQ). The requirement does not apply to the water with which screen residue is flushed back into the body of water when the water drawn contains an elevated level of fish fry.)

B. Limit values for wastewater from closed-loop cooling systems and from other origins due to steam generation:

system of power plants processes	Closed-loop cooling system of industrial to steam generation	Closed-loop cooling wastewater due	Other origins of
Substance	Limit value given as mL/L of the sample		
Settleable substances	0.3	0.3	0.3
Effective chlorine	-	0.3	-
Hydrazine	-	-	5
	Limit value given as mL/L of the 2 h mixed sample		
Chemical oxygen demand (COD)	30	40	-
Phosphorus	3	5	8*
Vanadium	-	-	3**
Iron	-	-	7***
Zinc	-	4	-

NOTE:

* This requirement applies only to wastewater from steam boilers.

** This requirement applies only to wastewater generated by the cleaning of the flue-gas side of oil-fired steam boilers.

*** This requirement applies only to wastewater generated by the cleaning of the flue-gas side of gas-fired steam boilers, and by the cleaning of air preheaters.

(NOTE: These values are considered met if the mean result of the five most recent tests conducted by the competent authority within the last three yr does not exceed the prescribed limits.)

(NOTE: If the limits for settleable substances have been exceeded in one sample, but the residue on ignition of the dry mass of those substances does not exceed 12 mg/L, then the actual reading of that sample may be replaced by 0.3 mL/L for calculating the mean, provided that the wastewater was generated by the treatment of running waters.)

Table 10-10

Requirements for Wastewater from Scrubbers on Incinerators Before Discharge

Wastewater from scrubbers on incinerators must meet certain requirements before it can be discharged into a communal wastewater treatment facility. Different types of incinerators must observe different limit values.

A. Incinerators - General

Parameter	Concentration in the 2 h mixed sample or the qualified sample, given in mg/L
Substances that can be filtered out	30
Chemical oxygen demand (COD), using:	
- Burnt lime	80[1]
- Limestone	150[1]
Sulfate	2000
Sulfite	20
Fluoride	30
Cadmium	0.05
Mercury	0.05
Chromium	0.5
Nickel	0.5
Copper	0.5
Lead	0.1
Zinc	1.0
Sulfide	0.2

(NOTE:

[1]Limit value after deducting the initial anaerobic state of the water before application of the process.)

(NOTE: The dilution factor G_F for the toxicity to fish may not be higher than the concentration of chloride in wastewater (given in g/L) divided by 8, plus 1. If this figure does not coincide with a standard dilution factor, the figure must be rounded up to the next higher dilution factor.)

(NOTE: These values are considered met if four out of the five most recent tests conducted by the competent authority within the last three yr do not exceed the prescribed limits, and no single result exceeds the prescribed limit by 50 percent.)

Table 10-10 (continued)

B. Hard Coal Incinerators

Parameter	Load[2 3], given in mg/kg of chloride
Cadmium	1.8
Mercury	1.8
Chromium	18
Nickel	18
Copper	18
Lead	3.6
Zinc	36
Sulfide	7.2

(NOTE:

[2]Chloride is calculated on the basis of the maximum amount of hard coal burned, given in metric tons per hour (t/h), and the chloride content of the hard coal used. The permit to discharge wastewater is issued on the basis of this information.

[3]If the concentration of chloride in wastewater exceeds 2 g/L due to the initial properties of the water used, then the excess of chloride content must be added to the calculated chloride load of the burned hard coal.)

(NOTE: These values are considered met if four out of the five most recent tests conducted by the competent authority within the last three yr do not exceed the prescribed limits, and no single result exceeds the prescribed limit by 50 percent.)

C. Incinerators of Residential Solid Waste

Wastewater from scrubbers on waste incinerators may not be discharged into bodies of water. However, if the residues from such scrubbers cannot otherwise be disposed of properly and without harm, then the following limit values apply for wastewater from scrubbers of waste incinerators.

Parameter	Load[4], given in mg per metric ton of waste
Cadmium	15
Mercury	15
Chromium	150
Nickel	150
Copper	150
Lead	30
Zinc	300
Sulfide	60

(NOTE:

[4]Waste refers to the capacity of the residential waste incinerator, as indicated on the permit to discharge wastewater.)

(NOTE: These values are considered met if four out of the five most recent tests conducted by the competent authority within the last three yr do not exceed the prescribed limits, and no single result exceeds the prescribed limit by 50 percent.)

Table 10-11

Requirements for Wastewater Resulting from the Storage of Residential Type Solid Waste (Seepage) Before Discharge

Wastewater that results from the storage of residential type solid waste (seepage) must meet certain requirements before it can be discharged.

Parameter	Qualified sample or 2 h mixed sample, given in mg/L
Biochemical demand of oxygen (BOD_5)	20
Chemical oxygen demand (COD)	200
Ammonium nitrate (NH_4-N)	50
Substances that can be filtered out	20[1]
Adsorbable organically bound halogens (AOX)	0.5
Mercury	0.05
Cadmium	0.1
Chromium	0.5
Nickel	0.5
Lead	0.5
Copper	0.5
Zinc	2.0
Toxicity to fish, given as dilution factor G_F	2

(NOTE:

[1]Standard value for other harmful substances that are not individually regulated.)

(NOTE: The reduction of the chemical oxygen demand (COD) is calculated by comparing the chemical oxygen demand of the wastewater that enters the treatment facility (in-flow) with that which leaves the facility (out-flow) within 24 h.

For wastewater that can be presumed to have a high oxygen demand (COD of 4000 mg/L or more), the chemical oxygen demand of a 2 h mixed sample must be reduced by at least 95 percent before the wastewater can be discharged.

Wastewater that receives its final biological treatment together with wastewater from other sources may be discharged only if tests prove that biochemical decomposition has reduced the chemical oxygen demand of the wastewater by 75 percent. This requirement does not apply if the chemical oxygen demand of the wastewater was less than 400 mg/L before it received its final biological treatment together with wastewater from other sources.)

(NOTE: These values are considered met if four out of the five most recent tests conducted by the competent authority, within the last 3 yr, do not exceed the prescribed limits, and no single result exceeds the prescribed limit by 100 percent.)

Table 10-12

Requirements for Wastewater from Areas Where Metal is Worked on Before Discharge

Wastewater that originates from machine shops, metal finishing shops [Gleitschleifanlagen], and paint shops where metal is worked on must meet certain requirements before it can be discharged into a communal wastewater treatment facility.

A. Requirements for Individual Wastewater Streams:

Limits apply to the wastewater that leaves the pre-treatment facilities of the particular area of origin.

Wastewater originating from the use of volatile halogenated hydrocarbons (LHKW) (i.e., greasing and degreasing; removing enamel or paint; treating [Entwickeln]; scrapping or junking metal [Entkonservierung])

LHKW[4]	0.1 mg/L of the sample
Wastewater from baths containing cadmium, as well as rinse baths	
Cadmium	0.2 mg/L of a 2 h mixed or qualified sample[3]
Wastewater containing mercury	
Mercury	0.05 mg/L of a 2 h mixed or qualified sample[3]

B. Requirements for Wastewater Specifically from Machine Shops, Metal Finishing Shops, and Paint Shops[1]:

Limits apply to the wastewater that leaves the final treatment facilities of the particular area of origin.

Area of Origin Substance, given as mg/L of the 2 h mixed or qualified sample[3]	Machine shops	Metal finishing shops [Gleitschleifanlagen]	Paint shops
Aluminum	3	3	3
Nitrogen from ammonium compounds	30	-	-
Chemical demand of oxygen (COD)	400	400	300
Iron	3	3	3
Fluoride	30	-	-
Nitrogen from nitrite	5	-	-
Hydrocarbons[2]	10	10	10
Phosphorus	2	2	2
AOX[2]	1	1	1
Lead	0.5	-	0.5
Cadmium	0.1	-	0.2
Free chlorine[2]	0.5	-	-
Chromium	0.5	0.5	0.5
Chromium VI	0.1	-	0.1
Volatile halogenated hydrocarbons (LHKW[4]	0.1	0.1	0.1
Volatile cyanide	0.2	-	-
Copper[5]	0.5	0.5	0.5
Nickel[5]	0.5	0.5	0.5
Zinc	2	2	2
Toxicity to fish, given as dilution factor G_F[6]	6	6	6

(NOTE:

[1]If no limit has been set, this substance or group of substances is not expected to be generated by this area of origin.
[2]Spot checks
[3]For charging facilities [Chargenanlagen], all limits apply to the sample.
[4]Sum of trichlorethene, tetrachlorethene, 1.1.1-trichlorehtane, and dichloromethane, calculated as chlorine.
[5]For reductive precipitation of nickel, the limit is 1 mg/L.
[6]The requirement for toxicity to fish does not apply if the wastewater receives additional biological treament together with residential type wastewater before being discharged into bodies of water.)

(NOTE: Wastewater from degreasers, from baths to remove metal, and from nickel baths may not contain EDTA (ethylene diamine-tetracetic acid and its salts).)

(NOTE: Wastewater that comes from two or more areas of origin and that is treated jointly must meet the requirements applicable to the parameters for each area of origin.)

(NOTE: Other limits apply for wastewater that originates in the following areas of metal processing: electroplating, pickling, electrolytic oxidation, bronzing/burnishing, galvanizing, tempering/hardening, enamelling, producing printed circuit boards and batteries.)

Table 10-13

Requirements for Wastewater from Areas where Glass is Worked on Before Discharge

Wastewater that originates from areas where glass is used or processed in any form must meet certain requirements before it can be discharged into a communal wastewater treatment facility.

A. Requirements for Wastewater from Glass Processing Facilities:

Substance, given in mg/L	Spot check	Qualified sample or 2 h mixed sample
Substances that can be filtered out	30	-
Chemical oxygen demand (COD)	-	130
Sulfate (SO_4^{2-})	-	3000
Fluoride (F^-)	-	30

(NOTE: Wastewater may not contain halogenated hydrocarbons from additives such as cooling lubricants. This requirement is considered met if it can be shown that only those additives are used that do not contain halogenated hydrocarbons.)

B. Requirements for Wastewater from Mechanical Treatment of Glass (lead glass, special glass, optical glass, sheet glass):

Limit values when the discharge of wastewater from the mechanical treatment of glass cannot be avoided:

Substance	Limit value, given as mg/L of a qualified sample or 2 h mixed sample
Arsenic (As)	0.3
Antimony (Sb)	0.3
Barium (Ba)	3
Lead (Pb)	0.5
Copper (Cu)	0.5
Nickel (Ni)	0.5
Chromium (Cr)	0.5
Cadmium (Cd)	0.1

(NOTE: Except for sheet glass operations, the requirements are considered met for those operations that discharge less than 8 m^3 per day if the wastewater treatment facility has been installed according to specifications; if it is operated and maintained according to permit requirements; and as long as it is monitored by the competent authority at least every 5 yr.)

C. Requirements for Wastewater from Chemical Surface Treatment of Glass (lead glass, special glass, optical glass)

Substance	Limit values for the load of auxiliary agents, given in relation to the amount of hydrofluoric acid (HF) used
Lead (Pb)	50 g per metric ton of hydrofluoric acid (HF)[1]
Arsenic (As)	50 g per metric ton of hydrofluoric acid (HF)[1]
Substance, given as mg/L	**Qualified sample or 2 h mixed sample**
Barium (Ba)	3
Copper (Cu)	0.5
Nickel (Ni)	0.5
Chromium (Cr)	0.5
Cadmium (Cd)	0.5

(NOTE:

[1]For facilities that use less than 1 metric ton of hydrofluoric acid (HF) (100%) within 4 weeks, the following limits apply:
Lead 250g/t of HF
Arsenic 250 g/t of HF.)

(NOTE: The load of auxiliary agents lead and arsenic in wastewater is calculated according to the following formula:

Load = C x Q x 100 divided by HF x P,

whereby:

C: concentration of the harmful substance in a qualified sample or 2 h mixed sample, given in g/m^3
Q: accumulation of wastewater during the four weeks before the sample was taken, given in m^3
HF: hydrofluoric acid used during the four weeks before the sample was taken, given in metric tons
P: concentration of the acid, given in percent.)

Table 10-14

Requirements for Wastewater from Dry Cleaning Businesses Before Discharge

Wastewater to be discharged from a drycleaning business must meet certain requirements before it can be discharged into a communal wastewater treatment facility.

Limit Values for Adsorbable Organically Bound Halogens (AOX, given as chlorine)

Size of the facility	Concentration per sample, given in mg/L	One h load, relative to the amount of material cleaned, given in mg/kg
Maximum cleaning capacity of the machine(s) of up to 50 kg of material	0.5	-
Maximum cleaning capacity of more than 50 kg of material	0.5	0.25

(NOTE: If more than one drycleaning machine is operated, the sum of their individual cleaning capacities determines the size of the facility.)

(NOTE: These values are considered met if the sum of individual AOX substances, calculated as chlorine, does not exceed the limit values.)

(NOTE: These requirements are considered met if the drycleaning business includes a wastewater treatment facility that has been installed, operated, and maintained according to specifications.)

Table 10-15

Limit Values for Phosphate Contents in Detergents and Cleaning Agents Used by Laundry Businesses

The maximum permissible content of phosphates for detergents and cleaning agents used in laundry businesses assumes a ratio of 1 kg of dry laundry to 5 L of washwater. The following table accounts for water of different degrees of hardness, and for detergents developed for specific purposes. Limit values for phosphates are given as grams of elementary phosphorus/L of washwater (g/L P).

Permissible Phosphate Content in Wash Water, Given in g/L P, Using Particular Types of Detergents

Hardness Degree of the Water	All-Purpose Detergents	Detergents for Delicates and Colored Wash	Detergents for the Prewash Cycle
a	b	c	d
1	0.45	0.70	0.30
2	0.60	0.85	0.40
3	0.80	1.00	0.55
4	1.00	1.20	0.65

These limit values also apply to detergents and cleaning agents designed to be used in a combination. For any combination of detergents or cleaning agents, the total phosphate content of the washwater must not exceed the limit values given in Column b (All-Purpose Detergents).

Table 10-16

Classification of Polluting Substances in Wastewater, Toxicity of Wastewater to Fish, and Threshold Quantities

Running Number	Polluting Substances or Groups of Substances	The Measuring Units Defined as one Pollution Unit	Thresholds for Concentration and Annual Volume
a	b	c	d
1	oxidizable substances that are under anaerobic conditions	50 kg of oxygen	20 mg/L, and 250 kg annually
2	phosphorus	3 kg	0.1 mg/L, and 15 kg annually
3	nitrogen	25 kg	5 mg/L, and 15 kg annually
4	organic halogen compounds, given as adsorbable organically bound halogens (AOX)	2 kg halogen, given as organically bound chlorine	100 µg/L, and 10 kg annually
5		metals and their compounds	
5.1	mercury	20 g metal	1 µg/L, and 100 g annually
5.2	cadmium	100 g metal	5 µg/L, and 500 g annually
5.3	chromium	500 g metal	50 µg/L, and 2.5 kg annually
5.4	nickel	500 g metal	50 µg/L, and 2.5 kg annually
5.5	lead	500 g metal	50 µg/L, and 2.5 kg annually
5.6	copper	1000 g metal	100 µg/L, and 5 kg annually
6	toxicity to fish	3000 m^3 of wastewater divided by G_F	G_F = 2

(NOTE: G_F is that degree of dilution in the fish test which renders wastewater nontoxic to fish.)

Table 10-17

Substances or Groups of Substances that Cannot be Discharged into Public Wastewater Facilities without a Permit

Substance or Substance Group	Threshold Quantity	
	mg/L	g/h
Arsenic	0.05	1
all		
Cadmium	0.02	0.4
all		
Chromium	0.2	8
all		
Copper	0.3	12
all		
Lead	0.2	8
all		
Nickel	0.2	6
all		
Mercury	0.005	0.1
all		
Adsorbed, organically halogens	0.5	10
1,1,1-trichloroethane	0.02	4
Tetrachloroethane	0.02	4
Trichloroethane	0.02	4
Trichloromethane	0.02	4
Active chlorine	0.2	4

Table 10-18

Self-Monitoring of Wastewater Treatment Facilities - Scope and Frequency for Wastewater from Areas where Metal is Worked on

(NOTE: For wastewater originating in areas where metal is worked on, the following is a list of the minimum number of parameters that must be monitored at a wastewater treatment facility. The self-monitoring report must include at least these parameters and must be filed with the competent authority on a yearly basis.)

Wastewater Flowing into the Wastewater Treatment Facility (applicable also to a partial stream of wastewater)

Parameters to be Monitored	Class 1 up to 50 m^3/day	Class 2 50-250 m^3/day	Class 3 more than 250 m^3/day
Wastewater Flowing into the Facility			
volume of wastewater entering the facility	-	c	c
pH-value	c	c	c
settleable substances	w	2 x w	wd
heavy metals[1] [2]	w	wd	wd
AOX[1] [2]	m	2 x m	w
COD[1]	m	m	w
Wastewater Flowing out of the Facility:			
volume of wastewater leaving the facility	c	c	c
pH-value	c	c	c
settleable substances	w	2 x w	wd
heavy metals[1] [2]	w	wd	wd
AOX[1] [2]	m	2 x m	w
COD[1]	m	m	w
chloride[1]	m	2 x m	w
sulfate[1]	m	m	w
hydrocarbons[1]	m	m	w
cyanide, easily released[1] [2]	w	wd	wd
NH_4-N[1]	m	2 x m	w

Key:
- c = continually
- wd = weekdays
- w = weekly
- m = monthly

(NOTE:

[1] Analysis of the non-settled, homogenized 2 h mixed sample, or of the qualified sample.
[2] Monitoring is only required if these materials were used.)

Table 10-19

Self-Monitoring of Wastewater Treatment Facilities - Scope and Frequency for Wastewater from Printing and Photo Chemical Operations, and from Laboratories

(NOTE: For wastewater originating from printing and photo chemical operations, and from laboratories, the following is a list of the minimum number of parameters that must be monitored at a wastewater treatment facility. The self-monitoring report must include at least these parameters and must be filed with the competent authority on a yearly basis.)

Wastewater Flowing into the Wastewater Treatment Facility (applicable also to a partial stream of wastewater)

Parameters to be Monitored	Class 1 up to 50 m^3/day	Class 2 50-250 m^3/day	Class 3 more than 250 m^3/day
Wastewater Flowing into the Facility:			
volume of wastewater entering the facility	-	c	c
pH-value	wd	c	c
settleable substances	w	2 x w	wd
heavy metals[1] [2]	w	wd	wd
AOX[1] [2]	m	2 x m	w
COD[1]	m	m	w
Wastewater Flowing out of the Facility:			
pH-value	c	c	c
volume of wastewater leaving the facility	c	c	c
settleable substances	w	2 x w	wd
heavy metals[1] [2]	w	wd	wd
AOX[1] [2]	m	2 x m	w
COD[1]	2 x m	2 x m	w
sulfate[1]	m	m	w
NH_4-N[1]	m	w	wd

Key:

c = continually
wd = weekdays
w = weekly
m = monthly

(NOTE:

[1]Analysis of the non-settled, homogenized 2 h mixed sample, or of the qualified sample.
[2]Monitoring is only required if these materials were used.)

Table 10-20

Self-Monitoring of Wastewater Treatment Facilities - Scope and Frequency

(NOTE: Unless other requirements apply to the wastewater treatment facility because of wastewater from certain points of origin, the following is a list of the parameters that must be monitored at a wastewater treatment facility. The self-monitoring report must include at least these parameters. Wastewater treatment facilities of Classes 1 and 2 must file the self-monitoring report with the competent authority on a yearly basis, facilities of Classes 3 and 4 once every 6 mo.)

Size or Capacity of the Wastewater Treatment Facility

Parameters to be Monitored	Class 1 up to 60 kg/day BOD_5 (raw)	Class 2 60-300 kg/day BOD_5 (raw)	Class 3 300-3000 kg/day BOD_5 (raw)	Class 4 more than 3000 kg/day BOD_5 (raw)
Wastewater In-Flow into the Facility				
volume of wastewater entering the facility[2]	-	m^3	c	c
pH-value	w	wd	c	c
temperature	-	wd	wd	c
BOD_5[1]	m	m	w	w
COD[1]	m	m	w	w
NH_4-N[1]	-	-	m	w
$P_{sat.}$[1]	-	-	w[5]	w
Wastewater Out-Flow from the Clarifier				
settleable substances	-	w	wd	wd
Aeration Tank				
O_2 content	w	wd	c	c
sludge volume	-	m	w	wd
dry sludge matter	-	m	w	wd
ignition loss and ignition residue	-	m	w	wd
Secondary Clarifier				
limit of visibility	-	wd	wd	wd

Table 10-20 (continued)

Parameters to be Monitored	Class 1 up to 60 kg/day BOD_5 (raw)	Class 2 60-300 kg/day BOD_5 (raw)	Class 3 300-3000 kg/day BOD_5 (raw)	Class 4 more than 3000 kg/day BOD_5 (raw)
Sludge Digestion Tank [Faulturm]				
pH-value	-	-	c	c
temperature	-	-	c	c
CO_2 content	-	-	w	w
ignition loss and ignition residue	-	-	m	m
amount of sewage sludge	-	-	w	w
Out-Flow from the Wastewater Treatment Facility[4]				
volume of wastewater[2] leaving the facility	w[3]	w[3]	c	c
pH-value	w	wd	c	c
temperature	w	wd	wd	c
settleable substances	w	w	wd	wd
BOD_5[1]	m	w	w	w
COD[1]	m	w	w	w
NH_4-N[1]	-	-	m	w
NO_3-N[1]	-	-	m	w
$P_{sat.}$[1]	-	-	m	w
AOX[1]	-	-	-	m

Key:

c = continually
wd = weekdays
w = weekly
m = monthly

(NOTE:

[1]Analysis of the nonsettled, homogenized 2 h mixed sample, or of the qualified sample.
[2]A hydraulically defined channel is required for measuring the volume of wastewater. The volume of fecal sludge and of wastewater from small wastewater treatment facilities or septic tanks must be recorded separately.
[3]Staggered measuring of the volume of wastewater over 2 h; it can be done by way of a measuring weir.
[4]If a wastewater treatment facility according to its permit is subject to stricter standards for the discharge of wastewater than ordinarily regulated, then the out-flow from the wastewater treatment facility must be monitored like a facility of the next larger class.
[5]Only required for facilities with a capacity of more than 12,000 kg/day BOD_5 (raw).)

INSTALLATION:	COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT German	DATE:	REVIEWER(S):

STATUS NA C RMA	REVIEWER COMMENTS:

(1) BCE (Environmental Planning) (2) BEE (Bioenvironmental Engineering) (3) Wastewater Treatment Plant Superintendent (4) BCE (Natural Resources Planner)