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FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OH
ELECTRICAL INSULATING VARNISH AD-93.(U)

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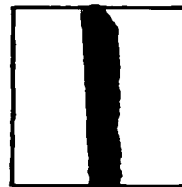
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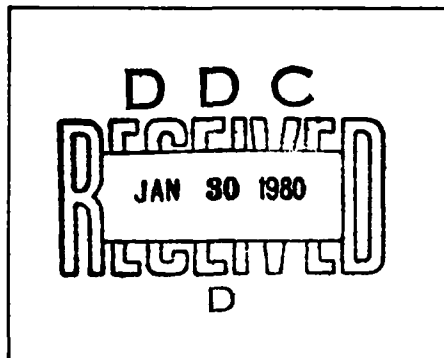
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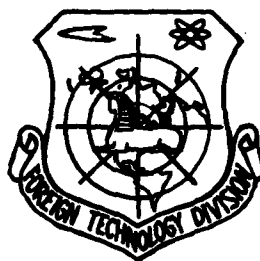
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FOREIGN TECHNOLOGY DIVISION



ELECTRICAL INSULATING VARNISH AD-93



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EDITED TRANSLATION

FTD-ID(RS)T-1002-79

16 August 1979

MICROFICHE NR: *AD-79-C-001118*

ELECTRICAL INSULATING VARNISH AD-93

English pages: 7

Source: GOST Nr. 14194-69, Moscow, pp. 1-5

Country of origin: USSR

Translated by: Marilyn Olacchea

Requester: AFML/MXA

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FOREIGN TECHNOLOGY DIVISION
WP-AFB, OHIO.

U. S. BOARD ON GEOGRAPHIC NAMES TRANSLITERATION SYSTEM

Block	Italic	Transliteration	Block	Italic	Transliteration
А а	<i>А а</i>	A, a	Р р	<i>Р р</i>	R, r
Б б	<i>Б б</i>	B, b	С с	<i>С с</i>	S, s
В в	<i>В в</i>	V, v	Т т	<i>Т т</i>	T, t
Г г	<i>Г г</i>	G, g	У у	<i>У у</i>	U, u
Д д	<i>Д д</i>	D, d	Ф ф	<i>Ф ф</i>	F, f
Е е	<i>Е е</i>	Ye, ye; E, e*	Х х	<i>Х х</i>	Kh, kh
Ж ж	<i>Ж ж</i>	Zh, zh	Ц ц	<i>Ц ц</i>	Ts, ts
З з	<i>З з</i>	Z, z	Ч ч	<i>Ч ч</i>	Ch, ch
И и	<i>И и</i>	I, i	Ш ш	<i>Ш ш</i>	Sh, sh
Й й	<i>Й й</i>	Y, y	Щ щ	<i>Щ щ</i>	Shch, shch
К к	<i>К к</i>	K, k	Ъ ъ	<i>Ъ ъ</i>	"
Л л	<i>Л л</i>	L, l	Ы ы	<i>Ы ы</i>	Y, y
М м	<i>М м</i>	M, m	Ь ь	<i>Ь ь</i>	'
Н н	<i>Н н</i>	N, n	Э э	<i>Э э</i>	E, e
О о	<i>О о</i>	O, o	Ю ю	<i>Ю ю</i>	Yu, yu
П п	<i>П п</i>	P, p	Я я	<i>Я я</i>	Ya, ya

*ye initially, after vowels, and after ь, ь; e elsewhere.
When written as ë in Russian, transliterate as yë or ë.

RUSSIAN AND ENGLISH TRIGONOMETRIC FUNCTIONS

Russian	English	Russian	English	Russian	English
sin	sin	sh	sinh	arc sh	sinh ⁻¹
cos	cos	ch	cosh	arc ch	cosh ⁻¹
tg	tan	th	tanh	arc th	tanh ⁻¹
ctg	cot	cth	coth	arc cth	coth ⁻¹
sec	sec	sch	sech	arc sch	sech ⁻¹
cosec	csc	csch	csch	arc csch	csch ⁻¹

Russian English

rot curl
lg log

1002

GOST 14194-69: ELECTRICAL INSULATING VARNISH AD-93

Date of introduction established at 1 January 1970 by resolution of Committee of Standards, Measures, and Measuring Devices under the auspices of The Council of Ministers of the USSR of 31 January 1969, No. 144

Nonobservance of standard punishable by law

The present standard applies to electrical insulating varnish AD-93, which represents a solution of caprone resin (polycaprolactam) and monophenyl urethane in a mixture of solvents.

Varnish AD-93 was designed for preparation of enamel coated conductors of brand PEVFP of all sizes and of brand PEVPI of from 1.62 to 2.44 mm in diameter.

Varnish AD-93 contains substances with a high degree of toxicity (tricresol, monophenyl urethane).

For prevention of poisoning during preparation and use the varnish must be sealed to the highest degree possible and places where the vapors of these substances are liberated into the working area must be ventilated.

1. TECHNICAL SPECIFICATIONS

1.1. The following must be used in the preparation of varnish AD-93:

Transparent caprone resin (polycaprolactam) with specific viscosity of 0.50/o solution in tricresol according to Ostwald viscosimeter of 0.7-0.75, relative viscosity of 2.25-3.0, containing no more than 1.50/o low-molecular compounds and no more than 0.250/o moisture;

monophenyl urethane with isocyanate number of 45-650/o and

degree of thermal decay or no less than 75o/o;

technical tar-coal tricresol per GOST 2264-54, brand A or dicresol containing no more than 0.8o/o moisture with boiling limits at 95o/o distillate of from 195° to 203°C;

tar-coal (technical) solvent per GOST 1928-67, brand A, or petroleum solvent for paint and varnish industry per GOST 10214-62.

1.2. The formula for varnish AD-93 must be confirmed by the Ministry of the Chemical Industry USSR.

1.3. The composition of solvents contained in the varnish formula and their percent concentration must be approved by the Main Sanitary-Epidemiological Administration of the Ministry of Health USSR.

1.4. When necessary the varnish is diluted by a mixture of cresol and solvent in a ratio of 4:1.

1.5. With respect to its physicochemical indicators varnish AD-93 should conform to specifications and standards indicated in the table.

А Наименования показателей	В Нормы
1. Внешний вид и цвет 2. Вязкость лака (при разбавлении 1:1) по вискозиметру ВЗ-4 при 20°C в сек 3. Содержание сухого остатка в %, не менее 4. Технологическая проба в эмалировании	С Однородная прозрачная жидкость от светло- до темно-коричневого цвета без механических примесей 80—160 16,5 D Должен выдерживать испытание по п. 2.6

Key: A - Name of indicator; B - Standards; C - Homogeneous transparent liquid from light to dark brown color without mechanical impurities; D - Must pass test indicated in 2.6. 1 . External appearance and color. 2. Viscosity of varnish (diluted 1:1) according to VZ-4 viscosimeter at 20°C in s. 3. Concentration of dry residue in o/o, no less than. 4. Technological test during enameling.

1.6. The finished varnish must be accepted by the technological control department of the manufacturer. The manufacturer must guarantee that the varnish which it produces meets the requirements of the present standard.

The manufacturer is obligated to replace the varnish free of cost within 6 months of the day that it is delivered to the client if during the indicated period the client finds that the varnish does not conform to the present standard. The varnish is replaced in observance of the rules of transportation and storage indicated in

GOST 9980-62 and the present standard.

2. TEST METHODS

2.1. Rules for sampling and test methods indicated below must be used by the manufacturer in checking the quality of the product to determine whether or not it conforms to the present standard.

2.2. In testing a delivered batch of varnish samples are taken in accordance with the specifications of GOST 9980-62. Here samples are taken from 50/o of the containers or vessels.

During testing and sampling precautionary measures must be taken, considering the toxicity of the solvents contained in the varnish.

A batch is defined as that quantity of varnish obtained in a single technological operation and accompanied by a single certification of quality.

2.3. The external appearance and color of the varnish are determined by pouring the varnish into a test tube of colorless glass

measuring 10 mm in diameter and observing it in transmitted light. The presence of mechanical inclusions is determined according to GOST 13526-68.

2.4. The viscosity of the varnish is determined according to GOST 8420-57 using the VZ-4 viscosimeter. In this case the varnish is diluted by a solvent [vehicle] (mixture of cresol and solvent 4:1) in a ratio of 1:1.

2.5. The concentration of dry residue is determined according to GOST 6989-54 at a temperature under a lamp of $180 \pm 2^\circ\text{C}$.

2.6. Technological tests during enameling. The dielectrical and physicomechanical properties of the varnish are tested in a varnish film applied to a round copper wire (GOST 2112-62) 1.56 mm in diameter. Enameling (application of the varnish film) is done on a OPM-2, on which the path of the calipers assures a diametric insulation thickness of 0.06-0.11 mm, in a mode which assures conformity of the enameled conductor to the requirements of technical specifications for conductors of brands PEVPP and PEVPI, confirmed in an established order.

3. PACKING, MARKING, TRANSPORTATION, AND STORAGE

3.1. Packing, marking, transportation, and storage of varnish AD-93 must conform to the requirements of GOST 9980-62. The varnish is packed in aluminum or zinc-plated containers or vessels with hermetically sealed lids.

Varnish AD-98 [sic] is stored in a dry place at a temperature of from minus 5 to plus 25°C.

end 1002

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A210 DMAAC	2	E017 AF/RDXTR-W	1
B344 DIA/RDS-3C	9	E403 AFSC/INA	1
C043 USAMIIA	1	E404 AEDC	1
C509 BALLISTIC RES LABS	1	E408 AFWL	1
C510 AIR MOBILITY R&D LAB/FIO	1	E410 ADTC	1
C513 PICATINNY ARSENAL	1	FTD	
C535 AVIATION SYS COMD	1	CCN	1
C591 FSTC	5	ASD/FTD/NIIS	3
C619 MIA REDSTONE	1	NIA/PHS	1
D008 NISC	1	NIIS	2
H300 USAICE (USAREUR)	1		
P005 DOE	1		
P050 CIA/CRB/ADG/SD	2		
NAVORDSTA (50L)	1		
NASA/NST-44	1		
AFIT/LD	1		
III/Code I-389	1		
NSA/1213/MDL	2		