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DMIC Memorandum 232

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DESIGNATIONS OF ALLOYS FOR THE
AEROSPACE INDUSTRY (REVISED)

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DESIGNATIONS OF ALLOYS FOR THE AEROSPACE INDUSTRY (REVISED)

W. D. Penniman*

INTRODUCTION

The purpose of this memorandum is to provide identification of the principal alloys of interest in defense work. In the course of establishing a technical Data File at DMIC, a list of index terms was created. The terms in this list, used for storing and retrieving metals data, encompass the base metals in the DMIC scope and the individual alloys in which DMIC has received data within the past several months. In addition, most of the standard alloys of interest to the aerospace community have been added.

Because the term list includes designations, nominal chemistry, and specifications, it presents much of the same type of information that was contained in DMIC Memorandum 177, and the earlier publication, DMIC Memorandum 42R.

A program was written to machine search the total list and extract those entries that would be pertinent to updating Memorandum 177. The result of that effort was Memorandum 223, which was presented in thesaurus format as adopted by Engineers Joint Council. The current memorandum, which constitutes an expanded and revised version of Memorandum 223, is presented in an entirely different format, which requires no familiarity with generic relationships of the engineering terms involved. This new format is a result of complete revision of the computer programs involved, but still used the basic DMIC list of index terms as input. That list of index terms is stored in thesaurus format with hierarchical relationships. This new memorandum, then, is completely computer generated from that list. As such, the publication is relatively easy to update, and revised versions will be issued on a frequent basis.

ORGANIZATION OF CONTENTS

Part I - Alloys by Base Material

This section contains an alphabetical listing of base materials within the scope of DMIC and, under each base material, a list of those alloys covered within this memorandum. Alloys will appear only once in this listing by the designation used in the DMIC Data File and under the generally accepted base material.

Part 2 - Alloy Information

This section presents the primary data of the report and includes an alphabetical listing of all alloy designations (primary and alternate) along with nominal chemistry, alternate designations, and those public and government specifications relating to that alloy. The alloys are arranged strictly in alphabetical order with no grouping by

base materials such as "iron base alloys". It is only necessary to know the alloy name or designation in order to gain access to this table. If the alloy name known is not the primary designation used in this publication, a "see" reference will appear. Composition and specifications, if known, will appear under the main entry indicated in the "see" reference. Also given in the main entry is a list of alternate designations by which the alloy may be known.

Part 3 - Alloys by Specification

This section contains an alphabetically arranged list of specifications and those alloys associated with each specification. Included in this listing are the following specifications:

- AMS - Aerospace Materials Specifications of the Society of Automotive Engineers
- ASTM - American Society for Testing and Materials
- FF - Federal
- JAN - Federal
- MIL - Military
- QQ - Federal
- SAE - Society of Automotive Engineers
- WW - Federal

Again only the primary alloy designations will appear in this list. Alternate designations are only identified in Part 2.

DMIC Memorandum 233, "Index of Temper Designations of Alloys" is being issued simultaneously with the present memorandum. As a set, these memoranda are intended to provide a ready reference to information on any given combination of alloy and temper designations.

Comments on the organization and content of this memorandum will be welcome. As indicated earlier, this publication will be updated periodically, consequently, any input on new alloys, specifications, etc., will be greatly appreciated.

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IRON
CONTINUED

PH15-7MO
PYROMET 860
STAINLESS W
S-590
TYPE 202
TYPE 420
TYPE 422
TYPE 431
TYPE 440 (A), (B), (C)
TYPE 502
UNITEMP 212
USS STRUX
USS-12MOV
USS 17-5 MNV
VASCO MA
V-57
W-545
X-200
9NI-4CO-.20C
9NI-4CO-.25C
9NI-4CO-.45C
14-4PH
15-5PH
16-15-A
16-25-A
17-4PH
17-7PH
17-14 CUM0
17-22A
17-22 A (S)
17-22 A (V)
19-90L
19-90X
19-9WM0
19-9WX
300M
422

MAGNESIUM

AM 100A
AZ31A
AZ61A
AZ63A
AZ80A
AZ91A
AZ91A
AZ91C
AZ92A
EK31XA
E237A
HM31A
HM21A
HM31A
H237A
LA141A
M1A
GE22A
ZL10A
ZM62A
ZK21A
ZK41A
ZK60
ZK61A

MOLYBDENUM (MO)

MO-.5TT
TZC
TZM
WZM

NICKEL

AF 1753
ALLOY 713C
ALLOY 713L

NICKEL
CONTINUED

HERYLC0 440
H-1900
CG 27
D-979
GMR-235
GMR 235-D
HASTELLOY H
HASTELLOY C
HASTELLOY N
HASTELLOY N-235
HASTELLOY W
HASTELLOY X
INCOLOY ALLOY 501
INCOLOY ALLOY 901 MOD
INCONEL ALLOY X-750
INCONEL ALLOY 600
INCONEL ALLOY 525
INCONEL ALLOY 700
INCONEL ALLOY 702
INCONEL ALLOY 718
INCONEL ALLOY 722
INCONEL ALLOY 751
IN-100
IN-102
MAR-M200
MAR-M211
MAR-M246
MAR-M421
MONEL ALLOY K-500
MONEL ALLOY 400
M-22
M-252
NICHROME V
NICKEL 200
NICROTUNG
NIMONIC 80A
NIMONIC 90
NIMONIC 105
NIMONIC 115
NITONEL ALLOY 825
PORL 162
PORL 163
PYROMET 71H
RA-333
REFRACTALLOY 2A
RENE 41
RENE 62
RENE 63
RENE 77
RENE 85
RENE 100
R-235
SEL
SEL-15
TAZ-H
TA7-RA
TD-NICKEL
TD-NICKEL-CR
TD-NICKEL-MO
TRW 1400
TRW 1900
UDIMET 500
UDIMET 520
UDIMET 630
UDIMET 700
UNITEMP 1753
WASPALLOY
WASPALLOY A
WASPALLOY H

NIOBIUM

NISE COLUMBIUM

NIFENIUM (RE)

STEEL

USF IRON

TANTALUM (TA)

STA-H80
TA-W
TA-W-MO
TA-10W
T 111
T 222

TITANIUM

TI (UNALLOYED)
TI-2CR-2FE-2MO
TI-4AL-3MO-1V
TI-4AL-4MN
TI-5AL-1.25FE-2.75CR
TI-5AL-1.5CR-1.5FE-1MO
TI-5AL-2.55N
TI-5AL-2.55N FLI
TI-5AL-4FECR
TI-5AL-55N-5ZR
TI-6AL-2MO
TI-6AL-25N-4ZR-2MO
TI-6AL-4V
TI-6AL-4V FLI
TI-6AL-6V-25N
TI-6AL-6V-2.55N
TI-7AL-4MO
TI-7AL-12ZR
TI-8AL-1MO-1V
TI-8AL-2CR-1TA
TI-8MN
TI-13V-11CR-3AL
TI-16V-2.5AL
TI-679

TUNGSTEN (W)

VANADIUM (V)

ZIRCONIUM

ZIRCALOY 2

ALLOY INFORMATION

RELATED SPECIFICATIONS

ALTERNATE DESIGNATION

DESIGNATION

COMPOSITION

AF-71		18MN-12CR-3MO-V-N-BAL (FE)	
AF-1753		.24C-16.3CR-7.2CO-1.6MO-8.4W-9.5FE-3.2TI-1.9AL -.0088-.06ZR-BAL (NI)	
AFC-77		14.5CR-13.5CO-5MO-V-N2-BAL (FE)	
AIRRESIST 13		.45C-.5MN-21CR-1.0NI-11W-2.0CB-3.5AL-2.5FE -0.1Y-BAL (CO)	
AIST E 9310 H	SEE AIST 9310 H		
AIST E 52100	SEE AIST 52100		
AIST 201		17.0CR-6.5MN-4.5NI-.15C MAX-BAL (FE)	MTL-S-5059
AIST 301	301	17.0CR-7.0NI-.14CMAX-BAL (FE)	
AIST 301N		17.0CR-7.0NI-.12N-.10CMAX-BAL (FE)	
AIST 302		18CR-8NI-BAL (FE)	
AIST 303		18CR-9NI-SI-BAL (FE)	
AIST 304		19CR-9.5NI-.08CMAX-BAL (FE)	
AIST 304ELC		19CR-9.5NI-.03CMAX-BAL (FE)	
AIST 305		18CR-12NI-BAL (FE)	
AIST 310		25CR-20NI-BAL (FE)	
AIST 314		25CR-20NI-2SI-BAL (FE)	AMS 5522
AIST 314		18CR-13NI-2.5MO-.08C MAX-BAL (FE)	
AIST 316		17.0CR-12.0NI-.10C-2.0MG-1.0SI-2.5MO-BAL (FE)	AMS 5507 AMS 5653
AIST 317		19CR-13NI-3.5MO-2MN-1.0SI-.08CMAX-BAL (FE)	
AIST 321		18CR-10NI-TI-BAL (FE)	
AIST 347	347	18CR-12NI-CB-BAL (FE)	
AIST 348		18CR-12NI-.20CMAX-BAL (FE)	

ALLOY INFORMATION		RELATED SPECIFICATIONS
DESIGNATION	ALTERNATE DESIGNATION	COMPOSITION
ATSI 403	403	12.25CR-1.0MN-.5SI-.15C-.04P-.04S-BAL (FE)
ATSI 410		12.25CR-1.0MN-1.0SI-.15C-.04P-.04S-BAL (FE)
ATSI 416		13CR-1.25MN-1.0SI-.15C-.60MO-.06P-.15S-BAL (FF)
ATSI 416 SE	SAE 51416F	13CR-.25SE-BAL (FE)
ATSI 601	SEE 17-22A	
ATSI 602	SEE 17-22A(S)	
ATSI 603	SEE 17-22A(V)	
ATSI 604	SEE CHROMOLOY	
ATSI 610	SEE M-11 MODIFIED	
ATSI 615	SEE GREEK ASCOLLOY	
ATSI 616	SEE 422	
ATSI 619	SEE LAPELLOY	
ATSI 630	SEE 17-4PH	
ATSI 631	SEE 17-7PH	
ATSI 632	SEE PH15-7MO	
ATSI 633	SEE AM 350	
ATSI 634	SEE AM 355	
ATSI 635	SEE STAINLESS W	
ATSI 650	SEE 16-25-6	
ATSI 651	SEE 19-9DL	
ATSI 652	SEE 19-9DX	
ATSI 653	SEE 17-14 CUMO	
ATSI 660	SEE 428A	

RELATED
SPECIFICATIONS

ALLOY INFORMATION

ALTERNATE
DESIGNATION

DESIGNATION

COMPOSITION

DESIGNATION	ALTERNATE DESIGNATION	COMPOSITION	RELATED SPECIFICATIONS
ATST 661	SEE N-155		
ATST 662	SEE DISCALOY		
ATST 663	SEE V-57		
ATST 664	SEE D-279		
ATST 665	SEE W-545		
ATST 670	SEE L605		
ATST 671	SEE S-816		
ATST 680	SEE HASTELLOY X		
ATST 681	SEE INCOLOY ALLOY 901		
ATST 682	SEE INCOLOY ALLOY 901 MOD		
ATST 683	SEE RENE 41		
ATST 684	SEE UDIMET 500		
ATST 685	SEE WASPALOY		
ATST 686	SEE GMR-235		
ATST 687	SEE UDIME 700		
ATST 688	SEE INCONEL ALLOY X-750		
ATST 689	SEE M-252		
ATST 690	SEE REFRACTALOY 26		
ATST 1025		.25C-.45MN-BAL (FE)	AMS 5075, AMS 5077 MIL-S-7097 MIL-S-7952 MIL-T-5066
ATST 1045		.45C-.75MN-.040P-.050S-BAL (FE)	
ATST 1060		.60C-.75MN-.040P-.050S-BAL (FE)	AMS 7240 FF-W-84



ALLOY INFORMATION

RELATED
SPECIFICATIONS

ALTERNATE
DESIGNATION

DESIGNATION

COMPOSITION

AISI 1075

1075

AISI 1090

.90C-.8MN-.04P-.055S-RAL (FE)

AMS 5112
00-W-470

AISI 4130

.30C-.95CR^a.20MO-BAL (FE)

AMS 6350
AMS 6351
AMS 6360
AMS 6361
AMS 6362
AMS 6370
AMS 6371
MIL-S-675A
MIL-S-18729
MIL-T-6736

AISI 4137 CO

MX-2
ROCOLOY
UNIMACH UCX 2

.39C-1.1CR-1CO-1SI-0.7MN-0.25MO-0.15V-RAL (FE)

AISI 4140

.40C-1CR-.2MO-BAL (FE)

AMS 437A
AMS 4379
AMS 4381
AMS 438P
AMS 4390
AMS 4395
MIL-S-5626

AISI 4330 WND

.30C-1.8NI-.8CR-.4MO-.07V-BAL (FE)

AMS 5328
AMS 5329

AISI 4330 ST

.30C-2.05NI-1.18CR-.45MO-.55SI-.7MN-BAL (FE)

AMS 6407

AISI 4330V

0.3C-1.8NI-0.8CR-0.4MO-0.07V-RAL (FE)

AMS 6427

AISI 4335V

.35C-1.8NI-.8CR-.35MO-.2V-BAL (FE)

AMS 6434

AISI 4337

.37C-.4CR-.75MN-.25MO-1.8NI-.040P-.35I-.040S
-BAL (FE)

AMS 6412
AMS 6413

AISI 4340

.4C-.8CR-.75MN-.25MO-1.8NI-.040P-.35I-.040S
-RAL (FE)

AMS 6359
AMS 6414
AMS 6415
MIL-S-5000

SAE 4340

DESIGNATION	ALTERNATE DESIGNATION	ALLOY INFORMATION	RELATED SPECIFICATIONS
AISI 6150		0.95CR-0.15V-0.50C-BAL (FE)	AMS 6448 AMS 6450 AMS 6455 AMS 7301 MIL-S-8503
AISI 8645		.46C-.88MN-.55NI-.65CH-.12MO-.0005N-H-BAL (FE)	
AISI 8620		.20C-.80MN-.55NI-.50CR-.20MO-RAL (FE)	
AISI 8630		.30C-.55NI-.5CR-.25MO-.2V-RAL (FE)	AMS 6274 AMS 6276 AMS 6277 MIL-S-8690
			AMS 6280 AMS 62H1 AMS 6355 AMS 6530 AMS 6550 MIL-S-6050 MIL-S-1872A MIL-T-6732 MIL-T-6734
AISI 8735		.35C-.88MN-.55NI-.50CR-.25MO-BAL (FE)	AMS 6282 AMS 6320 AMS 6357 AMS 6535 MIL-S-609A MIL-S-18733 MIL-T-6733
AISI 8740		.40C-.55NI-.50CR-.25MO-BAL (FF)	AMS 6322 AMS 6323 AMS 6324 AMS 6325 AMS 6327 AMS 6358 MIL-S-6049
AISI 9310	AISI 9310 H	.10C-.55MN-3.25NI-1.20CH-.11MO-BAL (FE)	AMS 6260 AMS 6265 AMS 6267
AISI 9310 H	SEE AISI 9310		



DESIGNATION	ALTERNATE DESIGNATION	ALLOY INFORMATION	RELATED SPECIFICATIONS
		COMPOSITION	
ATSI 52100	ATSI E 52100	1.0C-1.45CR-BAL (FE)	AMS 4440 AMS 4441 AMS 4444 AMS 4447 MIL-5-7420
ALCLAD 2024		4.5CV-1.5MG-0.6MN-BAL (AL)	AMS 4036 AMS 4040 AMS 4041 AMS 4042 AMS 4060 AMS 4061 QQ-A-362
ALCLAD 4061		1.0MG-0.4SI-0.25CU-0.25CR-BAL (AL)	AMS 4020 AMS 4021 AMS 4022 AMS 4023
ALCLAD 7075		5.6ZN-2.5MG-1.6CU-0.3CR BAL (AL)	AMS 4039 AMS 4046 AMS 4047 AMS 4048 AMS 4049 QQ-A-287
ALCLAD 7079		4.3ZN-3.3MG-0.6CU-0.2MN-0.17CR-BAL (AL)	MIL-A-4923
ALCLAD 717A		6.8ZN-2.75MG-2.0CU-0.30CR-BAL (AL)	AMS 4051 AMS 4052 MIL-A-91A3
ALLOY E		2.0TA-0.5SI-0.1TI-BAL (CH)	
ALLOY K-500	SEE MONFL ALLOY K-500		
ALLOY 713C	713C	.12C-12.5CR-4.2MO-2.0CR-.8TI-6.1AL-.012B-.107B-BAL (NI)	AMS 5391
ALLOY 713LC		.05C-12.0CR-4.5MO-2.0CR-.6TI-5.9AL-.010B-.107B-BAL (NI)	
ALMAG 35		.20SI-.15MN-.10CU-6.7MG-.15TI-.25FE-BAL (AL)	QQ-A-440

DESIGNATION	ALTERNATE DESIGNATION	ALLOY INFORMATION	RELATED SPECIFICATIONS
AM 100A		10AL-BAL (MG)	AMS 4455 AMS 4443 ASTM A 80-63 ASTM A 92-66 ASTM A 199-63 ASTM A 403 -63T MIL-M-46062 QQ-M-55 SAE 502
AM 350	AISI 633	17CR-4NI-3MO-BAL (FE)	AMS 5546 AMS 5548 AMS 5554 AMS 5745 AMS 5774 AMS 5775 MIL-S-8840
AM 355	AISI 634	15.5CR-4.5NI-3MO-BAL (FE)	AMS 5159 AMS 5368 AMS 5547 AMS 5549 AMS 5594 AMS 5743 AMS 5744 AMS 5740 AMS 5781 ASTM A461
AM 362		.03C-14.5CR-6.5NI-.80TI-.3MN-.2SI-BAL (FE)	
AM 363		.04C-11.5CR-4.0NI-.3TI-BAL (FE)	
AM 367		.03C-N-.15MN-SI-.01P-S-14.0CR-3.5NI-15.5CO-2.0MO-.5TI-BAL (FE)	
A NICKEL	SEE NICKEL 200		
ASTROLOY	SEE UDIMET 700		
AS30	CR-20W-1ZR	20W-1ZR-BAL (CB)	
AS55	CR-5W-1ZR	5W-1ZR-BAL (CB)	



DESIGNATION	ALTERNATE DESIGNATION	ALLOY INFORMATION	RELATED SPECIFICATIONS
A731R		7AL-1ZN-8AL (MG)	AMS 4375 AMS 4376 AMS 4377 ASTM H 90-66 ASTM H 91-63 ASTM H107-65 OO-M-31 OO-M-44 SAE 510 WM-T-825
A761A		6AL-1ZN-8AL (MG)	AMS 4350 ASTM H 91-63 ASTM H107-65 MIL-R-6944 OO-M-31 OO-M-40 SAE 520 WM-T-825
A763A	DOW METAL M	6AL-3ZN-8AL (MG)	AMS 4420 AMS 4422 AMS 4424 ASTM H 80-63 ASTM B 93-66 MIL-R-6944 OO-M-55 OO-M-56
A780A		8.5AL-.5ZN-8AL (MG)	AMS 4360 ASTM B 91-63 ASTM H107-65 OO-M-31 OO-M-40 SAE 523
A781A		7.5AL-.13MN-.70ZN-.01NI-.25SI-.10CU-8AL (MG)	ASTM B 80-63 ASTM B 93-66 ASTM H199-63 ASTM H403 -63T OO-M-55 OO-M-56 SAE 505

DESIGNATION	ALTERNATE DESIGNATION	ALLOY INFORMATION	RELATED SPECIFICATIONS
A791A	DDW METAL R	9AL-.7ZN-BAL (MG)	AMS 4490 ASTM B 93-66 ASTM B 94-58 QQ-M-3H
A791C		R.7AL-0.72N-BAL (MG)	AMS 4437 ASTM H 80-63 ASTM R 93-66 ASTM H199-63 ASTM B403-63T MIL-M-6062 QQ-M-55 QQ-M-56 SAE 504
A792A		9AL-2ZN-BAL (MG)	AMS 4395 AMS 4434 AMS 4453 AMS 4464 ASTM B 80-63 ASTM B 93-66 ASTM H199-63 ASTM B403-63T MIL-M-6062 MIL-R-6944 QQ-M-55 QQ-M-56 SAE 500
A515	SEE 6151		
A785	SEE 717A		
A110AT	SEE TI-5AL-2.55N		
A-140		9CU-6MG-.5MN-.5NT-BAL (AL)	AMS 4227



DESIGNATION	ALTERNATE DESIGNATION	ALLOY INFORMATION		RELATED SPECIFICATIONS
		COMPOSITION		
A29A	A1ST 660	.05C-1.35MN-.50SI-15.0CR-26.0NI-1.3MO-2.0TI -.2AL-.015B-RAL (FF)		AMS 5525 AMS 5731 AMS 5732 AMS 5734 AMS 5735 AMS 5736 AMS 5737 AMS 5804 AMS 5805 AMS 7235 AMS 747A AMS 7479 AMS 7481 ASTM A453 ASTM A461
A-29SAT	SEE TI-5AL-2.55N FLT			
A 35A		7SI-.3MG-RAL (AL)		AMS 421A MIL-C-211a0
A357		7SI-.50MG-RAL (AL)		MIL-A-211a0
BF-C11				
BFYLC0 10	SEE COPPER ALLOY NO 175			
BFYLC0 25	SEE COPPER ALLOY NO 172			
BFYLC0 165	SEE COPPER ALLOY NO 170			
BFYLC0 440				
B33	CR-5V	1.95RE-0.50TI-RAL (NI)		
B4A	CR-5V-5MO-1ZR	5V-BAL (CR)		
B4R	XR8R	5V-5MO-1ZR-RAL (CR)		
B-120VCA	SEE TI-13V-11CR-3AL	28W-2HF-0.07C-RAL (CH)		
B195		4.5CJ-SI-RAL (AL)		AMS 42A2 AMS 42A3 OO-A-596

ALLOY INFORMATION

RELATED SPECIFICATIONS

ALTERNATE DESIGNATION

COMPOSITION

DESIGNATION

.10C-8.0CR-10.0CO-6.0MO-1.0TI-6.0AL-.015S
 -.10ZR-4.0TA-BAL (NI)
 1ZR-BAL (CR)

B-1900

CR-17R

CR751
 FS80
 SCB990

CR-5V

SEE R33

CR-5V-5MO-1ZR

SEE R66

CR-5W-17R

SEE A555

CR-57R

SEE D14

CR-10MF-1TI-0.5ZR

SEE C103

CR-10TA-10W

SEE SCB291

CR-10TI-5ZR

SEE D36

CR-10TI-10MO-0.1C

SEE D31

CR-10W-17R-0.1C

SEE D43

CR-10W-2.5ZR

SEE CB752

CR-10W-10MF

SEE C129

CR-15W-5MO-1ZR

SEE F48

CR-15W-5MO-5TI-1ZR

SEE F50

CR-20W-17R

SEE A530

CR-20W-10TI-6MO

SEE D41

CR-20TA-10W-1ZR

SEE FS85

CR-33TA-1ZR

SEE FS82

CR74

SEE CB752

CR137

20TA-15W-5MO-BAL (CR)

CR132M

20TA-15W-5MO-ZR-C-HAL (CR)



ALLOY INFORMATION
COMPOSITION
RELATED SPECIFICATIONS

DESIGNATION	ALTERNATE DESIGNATION	COMPOSITION
CR751	SEE CR-1ZR	
CR752	CR-10W-2.5ZR CR74	10W-2.5ZR-BAL (CB)
CG 27		38NI-13CR-5.7MO-2.5TI-1.6AL-.7CB-.01R-HAL (FE)
CHROME 30		CR-6.0MGO
CHROMOLOY	ATSI 604	1.0CR-1.0MO-.20C-HAL (FE)
COPPER ALLOY NO 170	BERYLCO 165	
COPPER ALLOY NO 172	BERYLCO 25	
COPPER ALLOY NO 175	BERYLCO 10	
CO-10FE-2TH02		10FE-2TH02-BAL (CO)
CO-30NI		30NI-BAL (CO)
CRM 6D		1.05C-5.0MN-0.5SI-22CR-5.0NI-1.0MO-1.0W-1.0CR -.003B-BAL (FE)
CRM 15D		1.0C-5.0MN-0.50SI-20CR-5.0NI-2.0MO-2.0W-2.0CR -.003B-.20N-BAL (FE)
CRM 17D		.70C-5.0MN-0.50SI-20CR-5.0NI-1.0MO-1.0W-2.0CR -.003B-.20N-BAL (FE)
CRM 18D		.75C-5.0MN-.50SI-23CR5.0NI-5.0CO-1.0MO-1.0W -2.0CR-.003R-.25N-BAL (FE)
CR-RE		
C103	CR-10HF-1TI-.5ZR WC103	10HF-1TI-.5ZR-BAL (CB)
C104		5HF-10TI-BAL (CB)
C-110W	SEE TI-AMN	
C-115AMOV	SEE TI-4AL-3MO-1V	
C120AV	SEE TI-6AL-4V	

DESIGNATION	ALLOY INFORMATION	RELATED SPECIFICATIONS
ALTERNATE DESIGNATION	COMPOSITION	
C129	CR-10W-10HF	
C129Y	10W-10HF-BAL (CB)	
C-130AM	10W-10HF-0.1Y-BAL (CB)	
C355	55I-1.3CU-0.5MG-BAL (FE)	AMS 4215 MIL-C-211A0
DISCALOY	.04C-.90MN-.80SI-13.5CR-26.0NI-2.7MO-1.7TT -.1AL-.0058-BAL (FE)	AMS 5733 ASTM A453 ASTM A461
DOM METAL M		
DOM METAL R		
D6A	.46C-1.0CR-1.0MO-.55NI-BAL (FE)	
D6AC	.48C-.75MN-.22SI-1.05CR-.55NI-1.0MO-.07V-BAL (FE)	AMS 6431 AMS 643P MIL-S-4949
D14	5ZR-BAL (CR)	
D31	10TI-10MO-.1C-BAL (CB)	
D36	10TI-5ZR-BAL (CB)	
D40		
D41	20W-10TI-6MO-BAL (CB)	
D43	10W-1ZR-.1C-BAL (CB)	
D43V	10W-1ZR-.1C + Y-BAL (CR)	
D-979	.05C-.25MN-.20SI-15.0CR-4.0MO-4.0W-27.3FE -3.0TI-1.0AL-.0108BAL (NI)	AMS 5509 AMS 5746
EK31XA	30I-.5ZR-BAL (MG)	

DESIGNATION	ALTERNATE DESIGNATION	ALLOY INFORMATION	RELATED SPECIFICATIONS
EZ33A		3RE-2.5ZN-.6ZR-BAL (MG)	AMS 4396 AMS 4442 ASTM B 80-63 ASTM B199-63 ASTM B403 -63T MIL-R-6944 QQ-M-55 QQ-N-56 SAE 506
FS60	SEE TA-10W		
FS80	SEE CR-1ZR		
FS82	CR-33TA-1ZR	33TA-1ZR-BAL (CB)	
FS85	CR-28TA-10W-1ZR	28TA-10W-1ZR-BAL (CB)	
F185	SEE 261A		
F48	CR-15W-5MO-1ZR D40	15W-5MO-1ZR-BAL (CH)	
F50	CR-15W-5MO-5TI-1ZR	15W-5MO-5TI-1ZR-BAL (CB)	
GA-2	SEE 988E-2BEO		
GMP-235	ATSI 68A	.15C-.25MN-.6SI-15.5CR-5.25MO-2.0TI-3.0AL -.06A-10FE-BAL (NT)	
GMR 235-D		.15C-15.5CR-5.0MO-4.5FE-2.5TI-3.5AL-.050B-BAL (NT)	
GREEK ASCOLOY	ATSI 615 418 SPECIAL	13CR-3W-2NI-BAL (FE)	AMS 5354 AMS 5508 AMS 5616 AMS 5817 AMS 7470
HASTELLOY B		28MO-5FE-.4V-BAL (NI)	AMS 5396 ASTM A494 ASTM A295 ASTM B304 ASTM B333 ASTM B335

DESIGNATION	ALTRNATE DESIGNATION	ALLOY INFORMATION	RELATED SPECIFICATIONS
MASTELLOY C		17MO-15CR-6FE-5W-BAL (NI)	AMS 5388 AMS 5389 AMS 5530 AMS 5750 ASTM A494 ASTM A295 ASTM B306 ASTM B334 ASTM B336 ASTM B334
MASTELLOY N		0.06C-0.9MN-0.5SI-7CH-0.5CO-16.5MO-0.01R-5.0FE-BAL (NI)	
MASTELLOY Q-235		15.5CR-10FE-5.5MO-2.5TI-2AL-RAL (NI)	
MASTFLOY W		.12C-1.0MN-1.0SI-5.0CR-2.50CO-24.5MO-5.5FE-0.6V-HAL (NI)	
MASTFLOY X	AISI 680	.10C-.50MN-.50SI-22.0CR-1.5CO-9.0MO-.6W-18.5FE-RAL (NI)	AMS 5340 AMS 5516 AMS 5587 AMS 5588 AMS 5754 AMS 5798 AMS 5799 AMS 7237 ASTM B435
MAYNES ALLOY NO. 56		.27C-1.5MN-1.0SI-21CR-13NI-11.5CO-6.5MO-1.5W-.75CB-.10N-RAL (FE)	
MAYNES ALLOY NO. 151		20CR-13W-.05B-HAL (CO)	
MA-5137	SEE TI-5AL-2.55N		
MA-5137FLI	SFE TI-5AL-2.55N ELI		
MA-5158	SEE TI-6AL-6V-25N		
MA-6510	SEE TI-6AL-4V		
MA-6510FLI	SEE TI-6AL-4V ELI		
MA-8116	SFE TI-RAL-1MO-1V		

DESIGNATION	ALTERNATE DESIGNATION	ALLOY INFORMATION	RELATED SPECIFICATIONS
MM31A		3TM-.7ZR-6A (MG)	AMS 4384 AMS 4385 AMS 4445 ASTM H 80-63 ASTM R 90-66 ASTM B199-63 ASTM H403 -63T MIL-M-26075 MIL-M-46062 MIL-H-6944 OG-M-55 QQ-M-56 SAE 507
MM21A		2TM-.8MN-RAL (MG)	AMS 4367 AMS 4383 AMS 4390 ASTM R 90-66 MIL-M-8917
MM31A		3TM-1.5MN-BAL (MG)	AMS 4388 AMS 4389 MIL-M-8914
MNM		.3C-1B.5CR-9.5NI-3.5MN-BAL (FE)	
MP-9-4-20	SEE 9NI-4CO-.20C		
MP-9-4-25	SEE 9NI-4CO-.25C		
MP-9-4-45	SEE 9NI-4CO-.45C		
MP-12A	SEE 9B.5RE-1.2BE0		
MP20	SEE 98RE-2BE0		
MS21		.25C-.60MN-.60SI-27CR-3NI-62CO-5MO-1FE	AMS 5385
MS23		.40C-.30MN-.60SI-24CR-2NI-5.0W-1.0FE-RAL (CO)	AMS 5375
MS25	SEE L605		
MS27		.40C-.30MN-.60SI-25CR-32NI-5.5MO-1.0FE-RAL (CO)	AMS 5378
MS30		.45C-.60MN-.60SI-26CR-15NI-6MO-1.0FE-RAL (CO)	AMS 5380

DESIGNATION	ALTERNATE DESIGNATION	ALLOY INFORMATION	COMPOSITION	RELATED SPECIFICATIONS
MS31	SEE X-40		.50C-1.0MN-1.0SI-20CR-12.7W-.058-BAL (CO)	AMS 641R MIL-S-710R
MS151			.25C-1.8NI-1.5SI-1.3MN-.4MO-BAL (FE)	MIL-S-1621A
MS152	SEE W1-52		.18CMAX-2.63NI-.25MG-.25SI-1.4CR-.4MO-HAL (FE)	
MY-TUF			.15C-2.49NI-1.53CR-BAL (FE)	
MY 80			.11C-5.0NI-.50CR-.78MN-BAL (FE)	
MY 100			.15C-2.97NI-1.64CR-BAL (FE)	
MY 130/150			.025C-18.6NI-6.9CO-.4MO-.22TI-.08SI-.07AL-.05MN MAX-BAL (FE)	
MY 150			3.3TH-2.1ZN-.8ZR-BAL (MG)	
MY 230			.4C-5CR-1.3MO-.5V-BAL (FE)	AMS 4447 ASTM A 80-63 90-1-55 90-4-56
W732A				AMS 6437 AMS 6445 AMS 6487 AMS 6488
M-11 MODIFIED	AISI 610 MODIFIED ATSI TYPE M-11 TYPE M-11 MODIFIED STEEL			
IMI 679	SEE TI-479		.46FE-32NI-20.5CR-.75MN-.35SI-.30CU-.04C-.007S	
INCOLOY	SEE INCOLOY ALLOY 800		32NI-20.5CR-1.0TI-.75MN-.35SI-.15CU-.14C-BAL (FE)	AMS 5552 AMS 5742
INCOLOY ALLOY 800	INCOLOY		34FE-10.5CR-6.2MO-2.5TI-.45MN-.40SI-.25AL-.10CU-.010S-.05C-BAL (NI)	AMS 5660 AMS 5661
INCOLOY ALLOY 801	INCOLOY T		34FE-12.5CR-5.7MO-2.85TI-.09MN-.08SI-.20AL-.0158-.05C-BAL (NI)	AMS 5661
INCOLOY ALLOY 901	AISI 681			
INCOLOY ALLOY 901 MOD	AISI 682			
INCOLOY T	SEE INCOLOY ALLOY 801			



DESIGNATION	ALTERNATE DESIGNATION	ALLOY INFORMATION		RELATED SPECIFICATIONS
		COMPOSITION		
INCONEL	SFE INCONEL ALLOY 600			AMS 5542
INCONEL ALLOY W	SFE INCONEL ALLOY 722			AMS 5542
INCONEL ALLOY X-750	ATSI 68R INCONEL X	.04C-.70MN-.30SI-15.0CR-.9CR-6.8FE-2.5TI-.8AL-RAL(NI)		AMS 5598 AMS 5667 AMS 5668 AMS 5669 AMS 5671 AMS 5698 AMS 5699 AMS 5779 ASTM A461 JAN-4-562 MIL-F-6844 MIL-N-7784 MIL-N-R550
INCONEL ALLOY X550	SFE INCONEL ALLOY 751			AMS 5540
INCONEL ALLOY 600	INCONEL	.04C-.20MN-.20SI-15.0CR-7.2FE-RAL(NI)		AMS 5540 AMS 5665 AMS 5683 AMS 5687 AMS 7232 MIL-N-6710 MIL-N-6840 MIL-T-7840 00-w-390
INCONEL ALLOY 625		.05C-.15MN-.30SI-22.0CR-9.0MO-4.0CH-3.0FE-.2TI-.2AL-RAL(NI)		
INCONEL ALLOY 700		.12C-.10MN-.30SI-15.0CR-28.5CO-3.7MO-.7FE-2.2TI-3.0AL-BAL(NI)		
INCONEL ALLOY 702		.04C-.05MN-.20SI-15.6CR-.4FE-.7TI-3.4AL-HAL(NI)		AMS 5550

ALLOY INFORMATION

DESIGNATION	ALTERNATE DESIGNATION	COMPOSITION	RELATED SPECIFICATIONS
INCONEL ALLOY 718	PYROMET 718	.04C-.20MN-.30SI-18.6CR-3.1MO-5.0CR-1R.5FE -.9TI-.4AL-RAL (NI)	AMS 5383 AMS 5589 AMS 5590 AMS 5596 AMS 5597 AMS 5662 AMS 5663 AMS 5664 AMS 5832
INCONEL ALLOY 722	INCONEL W	15.5CR-2.5TI-0.7AL-7.0FE-RAL (NI)	AMS 5541
INCONEL ALLOY 751	INCONEL ALLOY X550	15CR-7FE-2.3TI-1AL-1CR-RAL (NI)	
INCONEL W	SFE INCONEL ALLOY 722		
INCONEL X	SFE INCONEL ALLOY X-750		
IN-100		.15C-10.0CR-15.0CO-3.0MO-5.5AL-.01R-.057R -1.0V-5TI-RAL (NI)	AMS 5397
IN-102		.06C-15CR-3MO-3W-3CB-7FE-.6TI-.4AL-.005R -.032R-.02MG-RAL (NI)	ASTM B445
I-400	SEE 92.0RE-4.25AF0		
J-1500	SFE M-252		
K MONEL	SFE MONEL ALLOY K-500		
LAPELLOY	ATSI 619	.30C-1.10MN-.50SI-11.5CR-.50NI-2.75MO-.25V -RAL (FE)	AMS 4386 ASTM H 90-66
LA141A		14LI-1.25AL-RAL (MG)	
LOCKALLOY	SEE 428F-3RA1		
LA05	ATSI 670 MS25 WF-11	.10C-1.5MN-.50SI-20.0CR-10.0NI-15.0W-RAL (CO)	AMS 5537 AMS 5759 AMS 5796 AMS 5797 AMS 7236 MIL-E-6844 MIL-R-5031



ALLOY INFORMATION

RELATED SPECIFICATIONS

ALTERNATE DESIGNATION

DESIGNATION

COMPOSITION

MARAGING (1R0)	PSM-200	12NI-5CR-3MO-(TYS--180 KSI)
MARAGING (200)	PSM-250	18NI-8.5CO-3.25MO-0.20TI-(TYS--200 KSI)
MARAGING (250)	SFE MARAGING (2R0)	18NI-7.75CO-4.85MO-0.4TI-(TYS--250 KSI)
MARAGING (2R0)	PSM-100 MARAGING (2R0)	18.5NI-8.75CO-4.9MO-0.65TI-(TYS--300 KSI)
MARAGING (300)	18NI 350 MARAGING	18NI-13CO-4MO-2TI-0.2AL-RAL (FE)
MARAGING (350)	SM200	.15C-9.0CR-10.0CO-12.5W-1.0CR-2.0TI-5.0AL -.015H-.05ZR-BAL (NI)
MAR-M200		
MAR-M211		.15C-9.0CR-10CO-2.5MO-5.5W-2.7CH-2.0TI-5.0AL -.015H-.05ZR-BAL (NI)
MAR-M244		.15C-9.0CR-10.0CO-2.5MO-10.0W-1.5TI-5.5AL -.015H-.05ZR-1.5TA-BAL (NI)
MAR-M307	SM302	.85C-21.5CR-10.0W-9.0TA-1.0FE-.3SI-.2ZR-.005H -RAL (CO)
MAR-M322	SM322	1.0C-.10MN-.10SI-.21.5CR-9.0W-4.5TA-2.5ZR-.75TI -.75FE-BAL (CO)
MAR-M421		.15C-.20MN-.20SI-15.5CR-10CO-1.75MO-3.5W- 1.75CH-1.75TI-4.25AL-.015H-.05ZH -1.0FE-BAL (NI)
MAR-M500		21.5CR-10NI-7W-3.5TA-.6C-.5ZR-.2TI-BAL (CO)
MAR-M01R		.05C-.2MN-.2SI-20CR-20NI-.1ZR-.5FE-7.5TA -RAL (CO)
MODIFIED ATSI TYPE M-11	SEE M-11 MODIFIED	
MONEL	SEE MONFL ALLOY 400	
MONEL ALLOY K-500	ALLOY K-500 K MONEL MONFL K-500	29CU-3AL-.5TI-BAL (NI)
MONEL ALLOY 400	MONFL	66.0NI-.12C-.90MN-1.35FE-.005S-.15SI-31.5CU

DESIGNATION	ALTERNATE DESIGNATION	ALLOY INFORMATION	RELATED SPECIFICATIONS
MONEL K-500	SEE MONEL ALLOY K-500		
MO-5TI		.5TI-BAL (MO)	AMS 7811 AMS 7813 AMS 7817 AMS 7819 AMS 7821
MO-5TI-.08ZR-0.3C	SEE TZM		
MO-1.2TI-.25ZR-.15C	SEE TZC		
MO-25W-.1ZR-.03C	SEE WZM		
MST-6AL-3MO-1V	SEE TI-6AL-3MO-1V		
MST-5AL-2.55N	SEE TI-5AL-2.55N		
MST-5AL-2.55N ELI	SEE TI-5AL-2.55N ELI		
MST-6AL-4V	SEE TI-6AL-4V		
MST-6AL-6V-25N	SEE TI-6AL-6V-25N		
MST-7AL-127R	SEE TI-7AL-127R		
MST-13V-11CR-3AL	SEE TI-13V-11CR-3AL		
MST-811	SEE TI-8AL-1MO-1V		
MX-2	SEE AIST 4137 CO		
M1A		1.2MN-.01NI-.30SI-.05CU-BAL (MG)	ASTM A107-65 MIL-R-6944 QQ-M-31 QQ-M-40 SAF 522 WW-T-R25
M-22		.13C-5.7CR-2.0MO-11.0W-6.3AL-.60ZR-3.0TA-BAL (NI)	
M-252	AIST 689 J-1500	.15C-19CR-10.0CO-10.0MO-2.6TI-.09ZR .0AL-.005R-BAL (NI)	AMS 5551 AMS 5756 AMS 5757 ASTM A461



DESIGNATION	ALTERNATE DESIGNATION	ALLOY INFORMATION	RELATED SPECIFICATIONS
NASA CO-W-RF		.4C-3CR-25W-1.0TI-1.0ZR-2.0RE-BAL (CO)	
NICHROME V		20CR-BAL (NI)	AMS 5676 AMS 5677 AMS 5682 MIL-E-6844 MIL-R-5031
NICKEL 200	A NICKEL	.06C-.25MN-.15FE-.005S-.05SI-.05CU-9AL (NI)	
NICROTUNG		.10C-12.0CR-10.0CO-8.0W-.4.0TI-.4.0AL-.050B -.052M-BAL (NI)	
NIMONIC 80A		.06C-.10MN-.70SI-10.5CR-1.1CO-2.5FE-1.3AL-HAL (NI)	
NIMONIC 90		.07C-.50MN-.70SI-19.5CR-18.0CO-2.4TI-1.4AL-BAL (NI)	
NIMONIC 105		20CO-15CR-5MO-.5AL-1.3TI-HAL (NI)	
NIMONIC 115		.15C-15.0CR-15.0CO-3.5MO-.4.0TI-5.0AL-BAL (NI)	
NITONEL	SEE NIONEL ALLOY R25		
NIONEL ALLOY R25	NIONEL	42NI-.05C-.2.15CR-3MO-2.25CU-.9TI-.5SI-BAL (FE)	
NITRALLOY 135 MOD.		0.4C-1.6CR-1.1AL-0.6MN-0.35MO-BAL (FE)	MIL-S-5709
N-155	AISI 661	.15C-1.5MN-.50SI-21.0CH-20.0NI-20.0CO-3.0MO -2.5W-1.0CB+TA-.15N-BAL (FE)	AMS 5376 AMS 5531 AMS 5532 AMS 5585 AMS 5768 AMS 5769 AMS 5794 AMS 5795 ASTM A461 MIL-F-6844 MIL-R-5031
PNRL 162		.12C-10.0CR-4.0MO-2.0W-1.0CH-1.0TI-6.5AL-.020M -.10ZR-2.0TA-BAL (NI)	
PNRL 163		.05C-.10MN-.20SI-17CH-1.5MO-2.0W-1.0CR-.25TI -6.25AL-.02B-.10ZR-.30FE-2.0TA-BAL (NI)	
PH13-8MO		13CR-8NI-2MO-BAL (FE)	

DESIGNATION	ALTERNATE DESIGNATION	ALLOY INFORMATION	RELATED SPECIFICATIONS
PH14-8MO		14CR-8NI-2.5MO+AL-BAL (FE)	AMS 5520 AMS 5657 AMS 5812 AMS 5813 ASTM A461 ASTM A564
PH15-7MO	ATSI 632	15CR-7NI-2.5MO-BAL (FE)	
PYROMET 71A	SEE INCONEL ALLOY 71A		
PYROMET 860		.05C-.25MN-.10SI-13.0CR-44.0NI-4.0CO-6.0MO-3.0TI-1.0AL-.31R-BAL (FE)	
QE22A		2.5AG-2.0DI-.7ZR-BAL (MG)	AMS 441A ASTM B 80-63 ASTM B199-63 ASTM B403-63T MIL-M-60A2 DD-M-55 DD-M-56
RA-333		.05C-1.5MN-1.25SI-25CR-3.0CU-3.0MO-3.0W-18FE-BAL (NI)	AMS 5717
REFRACTALLOY 26	ATSI 690	.03C-.80MN-1.0SI-18.0CR-20.0CO-3.2MO-16.0FE-2.6TI-.2AL-BAL (NI)	
RENE 41	ATSI 681	.09C-19.0CR-11.0CO-10.0MO-3.1TI-1.5AL-.005H-BAL (NI)	AMS 5399 AMS 5545 AMS 5712 AMS 5713 AMS 5800 AMS 7469
RENE 62		1.25AL-2.3CH-2.5TI-9.0MH-15.0CR-22.5FF-.05C-.010R-BAL (NI)	
RENE 63		.10C-14CR-15CO-6MO-3W-2.5TI-3.3AL-.015H-BAL (NI)	
RENE 77		.12C-14.68CH-15CO-6.2MO-3.35TI-4.3AL-.016H-BAL (NI)	
RENE 85	X-1900	.27C-9.3CH-15CO-3.25MO-5.35W-3.25TI-5.25AL-.015H-.03ZR-BAL (NI)	



ALLOY INFORMATION
COMPOSITION
RELATED SPECIFICATIONS

DESIGNATION	ALTERNATE DESIGNATION	COMPOSITION	RELATED SPECIFICATIONS
STA-900	SEE TA-10W	28CR-5W-1C-8AL (CO)	AMS 5373 AMS 5387 AMS 5788
STELLITE 6			
STELLITE 31	SEE X-40		
SUPERSTON 40	495	9.0AL-2.5FE-2.0NI-12.5MN-HAL (CU)	MIL-Q-21230
SU 16			
S-100	SEE 98.5RE-1.2RF0		
S-100R			
S-200	SEE 98RE-2RE0		
S-200R	SEE 98.7RE-1.3RE0		
S-590			
S-R16	AISI 671	20NI-20CR-20CO-4CH-4MO-4W-HAL (FE) .38C-1.2MN-.40SI-20CR-20NI-4MO-4W-4CR-4FE-HAL (CO)	AMS 5533 AMS 5770 AMS 5534 AMS 5765 ASTM A461
TAZ-R		.125C-6.0CH-4.0MO-4.0W-6.0AL-1.0ZR-8.0TA-HAL (NI)	
TAZ-RA		0.125C-6.0CH-4.0MO-4.0W-2.5CR-6.0AL-.004R-1.0ZR-8.0TA-8AL (NI)	
TA-W	SEE T 111		
TA-W-MO	FS6U STA-900 TA 7R2	10W-HAL (TA)	AMS 7R47 AMS 7R48
TA-RW-2MF			
TA-10W	SEE T 222		
TA-10W-2MF	SEE TA-13W		
TA-12.5W	SEE TA-10W		
TA 7R2			



DESIGNATION	ALTERNATE DESIGNATION	ALLOY INFORMATION	RELATED SPECIFICATIONS
		COMPOSITION	
TD-CORAL T		TD02-HAL (CO)	
TD-CORAL T-MO		15MO-4TD02-BAL (CO)	
TD-NICKEL		.01C-<.01MN-<.01SI-<.01CR-<.03CO-<.01MO-<.01FE -2.2TD02-BAL (NI)	
TD-NICKEL-CR		20CR-2.0TD02-HAL (NI)	
TD-NICKEL-MO		0.5C-15MO-.3ZR-3.0TD02-BAL (NI)	
TI (UNALLOYED)		MAXIMUMS (.5FE-.15C-.40-.07N-.0125M-.301MER)	MIL-T-9046 MIL-T-9047
TI-2CR-2FE-2MO		2CR-2FE-2MO-BAL (TI)	AMS 4923 MIL-T-9047
TI-4AL-3MO-1V	C-115AMOV MST-4AL-3MO-1V	4AL-3MO-1V-BAL (TI)	AMS 4912 AMS 4913 MIL-T-9046
TI-4AL-4MN	C-130AM	4AL-4MN-BAL (TI)	AMS 4925 MIL-T-9047
TI-5AL-1.25FE-2.75CR		5AL-1.25FE-2.75CR-BAL (TI)	
TI-5AL-1.5CR-1.5FE-1MO	TI-155A	5AL-1.5CR-1.5FE-1MO-BAL (TI)	AMS 4969 MIL-T-9047
TI-5AL-2.55N	A110AT HA-5137 MST-5AL-2.55N	5AL-2.55N-BAL (TI)	AMS 4910 AMS 4926 AMS 4953 AMS 4966 MIL-T-9046 MIL-T-9047
TI-5AL-2.55N ELI	A-295AT HA-5137FLI MST-5AL-2.55N FLI	5AL-2.55N-BAL (TI) EATHA LOW INTERSTITIAL	AMS 4909 AMS 4924 MIL-T-9047
TI-5AL-4FE-CR		5AL-4FE-CR-BAL (TI)	
TI-5AL-55N-5ZR		5AL-55N-5ZR-BAL (TI)	AMS 4968 MIL-T-9047
TI-6AL-2MO		6AL-2MO-BAL (TI)	

ALLOY INFORMATION		RELATED SPECIFICATIONS	
DESIGNATION	ALTERNATE DESIGNATION	COMPOSITION	
TT-6AL-2SN-4ZR-2MO		6AL-2SN-4ZR-2MO-BAL (TT)	MIL-T-9047
TT-6AL-4V	C120AV HA-6510 MST-6AL-4V	6AL-4V-BAL (TT)	AMS 4911 AMS 4928 AMS 4935 AMS 4954 AMS 4965 AMS 4967 MIL-T-9046 MIL-T-9047
TT-6AL-4V FLI	HA-6510FLI	6AL-4V-BAL (TT) EXTRA LOW INTERSTITIAL	AMS 4907 AMS 4930 MIL-T-9047
TT-6AL-6V-2SN	HA-5158 MST-6AL-6V-2SN	6AL-6V-2SN-BAL (TT)	AMS 4918 AMS 4971 MIL-T-9044 MIL-T-9047
TT-6AL-6V-2.5SN		6AL-6V-2.5SN-BAL (TT)	
TT-7AL-4MO		7AL-4MO-BAL (TT)	AMS 4970 MIL-T-9047
TT-7AL-12ZR	MST-7AL-12ZR	7AL-12ZR-BAL (TT)	
TT-8AL-1MO-1V	HA-R116 MST-R11 RM-R11 WC-R-1-1	8AL-1MO-1V-BAL (TT)	AMS 2241 AMS 2242 AMS 2249 AMS 4915 AMS 4955 AMS 4972 AMS 4973 MIL-T-9046 MIL-T-9047
TT-9AL-3CB-1TA		9AL-2CB-1TA-BAL (TT)	
TT-8MN	C-110M	8MN-BAL (TT)	AMS 4908 MIL-T-9046
TT-13V-11CR-3AL	R-120VCA MST-13V-11CR-3AL	13V-11CR-3AL-BAL (TT)	AMS 4917 MIL-T-9046 MIL-T-9047

DESIGNATION	ALTERNATE DESIGNATION	ALLOY INFORMATION	RELATED SPECIFICATIONS
TI-16V-2.5AL		16V-2.5AL-BAL(TI)	
TI-155A	SEE TI-5AL-1.5CR-1.5FE-1MO		
TI-679	IMI 679	11.0SN-2.25AL-5.0ZR-1.0MO-.30SI-<0.2FE-.013M2-BAL(TI)	MIL-T-9047
TRICENT	SEE 3004		
TRW 180N		.09C-13.0CR-9.0W-1.5CR-.6TI-6.0AL-.07R-.07ZR-BAL(NI)	
TRW 190N		.11C-10.3CH-10.0CO-9.0W-1.5CR-1.0TI-6.3AL-.030B-.10ZR-BAL(NI)	
TYPE M-11 MODIFIED STEEL	SEE M-11 MODIFIED		
TYPE 202		.18CR-5.0NI-8.75MN-.15CMAX-BAL(Fe)	AMS 5655
TYPE 420		13CR-.15CMIN-BAL(Fe)	AMS 5372
TYPE 422		12CR-1MO-1W-0.8NI-0.25V-BAL(Fe)	
TYPE 431		0.2C-16CR-2NI-BAL(Fe)	
TYPE 440(A),(B),(C)		HIGH C-17CR-0.5MO-BAL(Fe)	AMS 6466 AMS 6467
TYPE 502		5.3CR-.55MO-.1CMAX-BAL(Fe)	
TZC	MO-1.2TI-0.25ZR-0.15C	1.2TI-0.25ZR-0.15C-BAL(MO)	
TZM	MO-.5TI-.08ZR-.3C	0.5TI-0.08ZR-0.3C-BAL(MO)	
T 111	TA-RW-2HF WC111	RW-2.4HF-BAL(TA)	
T 222	TA-10W-2HF WC222	9.6W-2.4HF-0.01C-BAL(TA)	
UDIMET 500	ATSI 684 U 500 500ZA	.08C-1A.0CR-1B.5CO-4.0MO-2.9AL-.006B-.05ZR-BAL(NI)	AMS 5384 AMS 5751 AMS 5753
UDIMET 520	U 520	.05C-19.0CH-12.0CO-6.0MO-1.0W-3.0TI-2.0AL-.005B-BAL(NI)	

DESIGNATION	ALTERNATE DESIGNATION	ALLOY INFORMATION		RELATED SPECIFICATIONS
		COMPOSITION		
WASPALLOY A	SEE WASPALLOY			
WASPALLOY R	SEE WASPALLOY			
WC103	SEE C103			
WC111	SEE T 111			
WC222	SEE T 222			
WC-R-1-1	SEE TI-RAL-1MO-1V			
WF-11	SEE L605			
WF-31				
WT-52	MS152		.15C-1.42MN-.42SI-20CP-10NI-2.6MO-10.7W-1.0TT-2.0FE-RAL(CO)	
WTM	MO-25W-.1ZR-.03C		.45C-.50MN-.50SI-21CR-1.0NI-11W-2.0CH-2.0FE-RAL(CO)	
W-545	ATSI 665		25W-0.1ZR-0.03C-RAL(MO)	AMS 5547 AMS 5741 ASTM A453
XR8R	SEE R88		26NI-13.5CR-3TI-1.75MO-1.5MN-RAL(FE)	
X-40	MS31 STELLITF 31		.50C-.75MN-.75SI-25.5CR-10.5NI-7.5W-RAL(CO)	AMS 5382
X-45			.25C-1.0MN-25.5CR-10.5NI-7.0W-.01B-2.0FF-RAL(CO)	
X-110	SEE D43		0.43C-2.0CR-1.6SI-0.5MO-0.05V-RAL(FE)	
X-200				
X-1900	SEE RENF 85			
ZF10A			1ZM-0.2RE-RAL(MG)	ASTM B 90-64 MIL-M-46037

RELATED SPECIFICATIONS

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ALTERNATE DESIGNATION

DESIGNATION

DESIGNATION	ALTERNATE DESIGNATION	ALLOY INFORMATION	RELATED SPECIFICATIONS
ZK62A		5.72N-1.8TH-RAL (MG)	AMS 4438 ASTM B 80-63 MIL-M-46062 QQ-M-56 SAE 50A
ZIRCALOY 2		1.55N-RAL (ZR)	
ZK21A		2.32N-0.6ZR-BAL (MG)	AMS 4387 MIL-M-46039
ZK51A		4.52N-0.7ZR-RAL (MG)	AMS 4443 ASTM B 80-63 MIL-M-46062 QQ-M-56 SAE 509
ZK60A		5.52N-0.5ZR-RAL (MG)	AMS 4352 AMS 4362 ASTM B 91-63 ASTM B107-65 QQ-M-31 QQ-M-40 SAE 524 WW-T-825
ZK61A		6.02N-1ZR-BAL (MG)	AMS 4444 ASTM B 80-63 ASTM H403-63T MIL-M-46062 QQ-M-56 SAE 513
9NI-4CO-.20C	MP-9-4-20 9-4-20	9NI-4CO-.20C-BAL (FE)	AMS 6541 AMS 6546
9NI-4CO-.25C	MP 9-4-25 9-4-25	9NI-4CO-.25C-BAL (FE)	
9NI-4CO-.45C	HP9-4-45 9-4-45	9NI-4CO-.45C-BAL (FE)	AMS 6542
9-4-20	SEE 9NI-4CO-.20C		
9-4-25	SEE 9NI-4CO-.25C		



DESIGNATION	ALTERNATE DESIGNATION	ALLOY INFORMATION	COMPOSITION	RELATED SPECIFICATIONS
9-4-45	SEE 9NI-4CO-.45C			
14S	SEE 2014			
14-4PH			14CR-4.2NI-2.3MO-3.2CU-0.25 (CB + TA)-HAL (FE)	AMS 5340
15-5PH			15CR-3.3CU-4.6MN-.45TI-.34N-.25W-.04C-AL (FE)	AMS 565A AMS 5659
14-15-6			14CR-15NI-7.5MN-6MO-0.35N-HAL (FE)	
14-25-6	ATSI 650		25NI-16CR-6MO-HAL (FE)	AMS 5725 AMS 5727 AMS 5728 AMS 5782 AMS 5783 ASTM A457 ASTM A458 ASTM A477 MIL-S-1653A
17S	SEE 2017			
17-4PH	ATSI 630		17CR-4NI-4CU-8AL (FE)	AMS 5342 AMS 5343 AMS 5344 AMS 5355 AMS 539A AMS 5643 AMS 5825 AMS 5827 ASTM A461 ASTM A564
17-7PH	ATSI 631		17CR-7NI-1AL-8AL (FE)	AMS 552A AMS 5529 AMS 554A AMS 5644 AMS 5673 ASTM A461 ASTM A564 MIL-S-25043
17-14 CUMO	ATSI 653		15.90C-14.1NI-2.5MO-.75MN-.55TI-.45CR-.25T -.12C-BAL (FE)	

ALLOY INFORMATION		ALTERNATE DESIGNATION	COMPOSITION	RELATED SPECIFICATIONS
DESIGNATION				
17-22A	AISI 601	1.25CR-.65SI-.55MN-.45C-.5MO-.25V-BAL (FE)	AMS 6304	
17-22A(S)	AISI 602	0.3C-1.3CR-0.5MO-0.25V-BAL (FE)	AMS 6302 AMS 6305 AMS 6458	
17-22A(V)	AISI 603	0.28C-1.25CR-0.85V-0.65SI-0.5MO-BAL (FE)	AMS 6303 AMS 6436	
1ANI 350 MARAGING	SEE MARAGING (350)			
19-9DL	AISI 651	19.25CR-9.0NI-1.25MO-1.25W-.4CR-.3TI-.3C-BAL (FE)	AMS 5369 AMS 5526 AMS 5527 AMS 5579 AMS 5720 AMS 5721 AMS 5722 ASTM A459 ASTM A457 ASTM A458 ASTM A477	
19-9DX	AISI 652	19.25CR-9.0NI-1.50MO-1.25W-.6TI-.3C-BAL (FE)	AMS 5578 AMS 5539 AMS 5723 AMS 5724 AMS 5729 ASTM A457 ASTM A458 ASTM A477	
19-9W0		19CR-9NI-1.3W-.6SI-.5MN-.4CR-.4TI-.4MO-.16-BAL (FE)	AMS 5782 AMS 5783	
19-9WX		20.5CR-8.5NI-1.55W-1.3CR-.5MO-.2TI-.11C-BAL (FE)	AMS 5782 AMS 5783	
24S	SEE 2024			
25S	SEE 2025			
40-E		5.5ZN-0.6MG-0.5CR-0.2TI-BAL (AL)	00-A-601	
52S	SEE 5052			

DESIGNATION	ALTERNATE DESIGNATION	ALLOY INFORMATION	RELATED SPECIFICATIONS
615	9F 6061		
629E-38A1	LOCKALLOY	62.0HF-38.0AL	
755	SEE 7075		
92.0RF-4.25RE0	T-400	92.0RE-4.25BE0-.20AL-.50C-.30FE-.10MG-.15SI	
98BE-2RF0	GR-7 HP20 S-200	98.0RE-2.0BE0-.15C-.18FE-.08MG-.05SI	AMS 7901
9ARV40 MODIFIED	SEE USS STRUX		
9A.59E-1.29E0	HP-12A S-100	9A.59E-1.28E0-.14AL-.15C-.16FE-.08MG-.08SI	
9A.79E-1.39E0	S-200B	9A.79E-1.32HE0-.11C-.075AL-.0135CR-.13FE-.012MG-MN-NI-SI	
195		4.5CU-BAL (AL)	AMS 4230 AMS 4231 00-A-601
220		10MG-BAL (AL)	AMS 4240 00-A-601
300W	TRICENT	0.43C-1.8NI-1.6SI-0.8CH-0.4MO-V-BAL (FE)	AMS 6416
301	SEE AIST 301		
347	SEE AIST 347		
354		1.8CU-9.0SI-0.5MG-BAL (AL)	MIL-A-21190 00-A-601
355		5SI-1.2CU-0.5MG-BAL (AL)	AMS 4210 AMS 4212 AMS 4214 AMS 4240 AMS 4241 00-A-596 00-A-601

DESIGNATION	ALTERNATE DESIGNATION	ALLOY INFORMATION		RELATED SPECIFICATIONS
		COMPOSITION	COMPOSITION	
2014	145	4.5CU-0.8SI-0.8MN-0.5MG-BAL (AL)		AMS 4014 AMS 4028 AMS 4029 AMS 4121 AMS 4134 AMS 4135 AMS 4153 MIL-A-12545 MIL-A-22771 QQ-A-200/2 QQ-A-225/4 QQ-A-250/3
2017	175	4.0CU-0.7MN-0.50MG-BAL (AL)		AMS 4110 AMS 4118 QQ-A-225/5
2020		4.5CU-1.1I-0.5MN-0.2C (AL)		MIL-A-88R2
2021		6.3CU-0.3MN-BAL (AL)		

ALLOY INFORMATION

RELATED
SPECIFICATIONS

DESIGNATION	ALTERNATE DESIGNATION	COMPOSITION	RELATED SPECIFICATIONS
2024	245	4.5CU-1.5MG-0.6MN-BAL (AL)	AMS 4033 AMS 4035 AMS 4036 AMS 4037 AMS 4086 AMS 4087 AMS 4088 AMS 4097 AMS 4098 AMS 4099 AMS 4103 AMS 4104 AMS 4105 AMS 4106 AMS 4112 AMS 4119 AMS 4120 AMS 4152 AMS 4164 AMS 4165 AMS 7223 MIL-R-5674 QQ-A-200/3 QQ-A-225/6 QQ-A-250/4 QQ-A-250/5 WW-T-700/3
2025	255	4.5CU-0.85SI-0.80MN-BAL (AL)	AMS 4130 QQ-A-367
2219	RR-57	6.3CU-0.3MN-0.1RZR-0.1V-0.06TI-BAL (AL)	AMS 4031 AMS 4143 AMS 4144 MIL-A-8920
2319		6.3CU-0.3MN-0.18ZR-0.15TI-0.10V-BAL (AL)	AMS 4191
2619	F185 RR-58	2.3CU-1.6MG-1.1FE-1.1NI-0.07TI-BAL (AL)	AMS 4132 QQ-A-367



DESIGNATION	ALTERNATE DESIGNATION	ALLOY INFORMATION	RELATED SPECIFICATIONS
3003		1.25MN-BAL (AL)	AMS 4006 AMS 400A AMS 4010 AMS 4065 AMS 4067 QQ-A-359 WW-T-700
3004		.30SI-1.25MN-.25CU-.1MG-.25ZN-.7FE-BAL (AL)	
3105		0.6MN-.5MG-HAL (AL)	
5050		0.40SI-0.7FE-0.20CU-0.20MN-0.75MG-0.10CR-0.25ZN-HAL (AL)	
5052	52S	2.5MG-0.25CR-HAL (AL)	AMS 4015 AMS 4016 AMS 4017 AMS 4069 AMS 4070 AMS 4071 AMS 4114 QQ-A-315 QQ-A-31A WW-T-700
5056		5MG-0.12MN-0.12CR-HAL (AL)	AMS 4192 QQ-A-430
5083		4.5MG-0.65MN-0.15CR-HAL (AL)	AMS 4056 AMS 4057 AMS 405A AMS 4059 MIL-A-8701 MIL-A-135A MIL-A-46027C MIL-A-46083 QQ-A-20074 QQ-A-25076
5084		4.0MG-.15CR-BAL (AL)	QQ-A-20075 QQ-A-25077 WW-T-789

RELATED
SPECIFICATIONS

DESIGNATION	ALTERNATE DESIGNATION	ALLOY INFORMATION	COMPOSITION	RELATED SPECIFICATIONS
5154			3.5MG-0.25CH-BAL (AL)	AMS 4018 AMS 4019 MIL-A-17357
5454			.75MN-2.7MG-.13CH-BAL (AL)	QQ-A-200/A QQ-A-250/10
5456			5.1MG-0.8MN-0.13CH-BAL (AL)	MIL-A-46027C MIL-A-46093 QQ-A-200/7 QQ-A-250/9
6061	61 S		1.0MG-0.6SI-0.27CU-0.25CH-BAL (AL)	AMS 4025 AMS 4026 AMS 4027 AMS 4043 AMS 4053 AMS 4079 AMS 4080 AMS 4081 AMS 4092 AMS 4093 AMS 4115 AMS 4116 AMS 4117 AMS 4127 AMS 4146 AMS 4150 AMS 4160 AMS 4161 MIL-A-1150/A MIL-A-12545 MIL-A-22771 MIL-A-25994 MIL-T-7081 QQ-A-270 QQ-A-325 QQ-A-327 QQ-A-367 WW-T-700



DESIGNATION	ALTERNATE DESIGNATION	ALLOY INFORMATION	RELATED SPECIFICATIONS
6062		1.0MG-0.6SI-0.27CU-0.09CH-AL (AL)	AMS 4091 AMS 4092 AMS 4093 AMS 4155 MIL-A-22771 QQ-A-270 QQ-A-325 WW-T-7H9
6063		0.65MG-0.4SI-AL (AL)	AMS 4156
6151	A51S	.9SI-0.6MG-0.25CR-AL (AL)	AMS 4125 QQ-A-367
6951		.35SI-0.4FE-0.30CU-0.10MN-0.60MG-0.20ZN-AL (AL)	
7001		.35SI-0.40FE-2.1CU-0.20MN-3.0MG-0.29CR-7.4ZN-0.20TI-AL (AL)	
7002		3.5ZN-2.5MG-.8CU-.2MN-AL (AL)	
7004		4.3ZN-1.8MG-.10MAX.CU-.3MN-8AL (AL)	
7005		4.6ZN-1.4MG-.10MAX.CU-.5MN-.15CR-.157R-AL (AL)	
7006			
7007		4.5ZN-1.8MG-.25MAX.CU-.3MN-.15CR-.157R-.05TI-8AL (AL)	
7039		.30SI-0.40FE-0.10CU-0.25MN-2.8MG-0.20CH-6.0ZN-0.10TI-AL (AL)	

ALLOY INFORMATION

RELATED SPECIFICATIONS

ALTERNATE DESIGNATION

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7075

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5.6ZN-2.5MG-1.6CU-0.3CR-BAL (AL)

AMS 4038
AMS 4044
AMS 4045
AMS 407A
AMS 4122
AMS 4123
AMS 4124
AMS 4139
AMS 4154
AMS 4167
AMS 4168
AMS 4169
AMS 4170
MIL-A-22771
00-A-200/11
00-A-225/9
00-A-250/12
00-A-250/13

7079

4.3ZN-3.3MG-0.6CU-0.2MN-0.17CR-BAL (AL)

AMS 4024
AMS 4136
AMS 413R
AMS 4171
MIL-A-H923
MIL-A-22771
00-A-200/12
00-A-250/17

7080

7106

7139

717A

4.5ZN-2.25MG-.10MAX.CU-.25MN-.15CR-.05TI-BAL (AL)

A785

6.8ZN-2.75MG-2CU-0.3CR-BAL (AL)

00-A-200/13
00-A-250/14
00-A-250/15
AMS 4158

ALLOYS BY SPECIFICATION

SPECIFICATIONS	RELATED ALLOYS	SPECIFICATIONS	RELATED ALLOYS
AMS 2241	T1-RA1-1M0-1V	AMS 4048	ALCLAD 7075
AMS 2242	T1-RA1-1M0-1V	AMS 4049	ALCLAD 7075
AMS 2249	T1-RA1-1M0-1V	AMS 4051	ALCLAD 717H
AMS 4001	1100	AMS 4052	ALCLAD 717H
AMS 4003	1100	AMS 4053	6061
AMS 4006	3003	AMS 4056	5083
AMS 4008	3003	AMS 4057	5083
AMS 4010	3003	AMS 4058	5083
AMS 4014	2014	AMS 4059	5083
AMS 4015	5052	AMS 4060	ALCLAD 2024
AMS 4016	5052	AMS 4061	ALCLAD 2024
AMS 4017	5052	AMS 4062	1100
AMS 4018	5154	AMS 4065	3003
AMS 4019	5154	AMS 4067	3003
AMS 4020	ALCLAD 6061	AMS 4069	5052
AMS 4021	ALCLAD 6061	AMS 4070	5052
AMS 4022	ALCLAD 6061	AMS 4071	5052
AMS 4023	ALCLAD 6061	AMS 4078	7075
AMS 4024	7079	AMS 4079	6061
AMS 4025	6061	AMS 4080	6061
AMS 4026	6061	AMS 4081	6061
AMS 4027	6061	AMS 4082	6061
AMS 4028	2014	AMS 4083	6061
AMS 4029	2014	AMS 4086	2024
AMS 4031	2219	AMS 4087	2024
AMS 4033	2024	AMS 4088	2024
AMS 4035	2024	AMS 4091	6062
AMS 4036	ALCLAD 2024 2024	AMS 4092	6062
AMS 4037	2024	AMS 4093	6062
AMS 4038	7075	AMS 4097	2024
AMS 4039	ALCLAD 7075	AMS 4098	2024
AMS 4040	ALCLAD 2024	AMS 4099	2024
AMS 4041	ALCLAD 2024	AMS 4102	1100
AMS 4042	ALCLAD 2024	AMS 4103	2024
AMS 4043	6061	AMS 4104	2024
AMS 4044	7075	AMS 4105	2024
AMS 4045	7075	AMS 4106	2024
AMS 4046	ALCLAD 7075	AMS 4110	2017
AMS 4047	ALCLAD 7075	AMS 4112	2024

ALLOYS BY SPECIFICATION

SPECIFICATIONS	RELATED ALLOYS	SPECIFICATIONS	RELATED ALLOYS
AMS 4114	5052	AMS 4180	1100
AMS 4115	6061	AMS 4182	5056
AMS 4116	6061	AMS 4191	2319
AMS 4117	6061	AMS 4210	355
AMS 4118	2017	AMS 4212	355
AMS 4119	2024	AMS 4214	355
AMS 4120	2024	AMS 4215	C355
AMS 4121	2014	AMS 4217	356
AMS 4122	7075	AMS 4218	A 356
AMS 4123	7075	AMS 4227	A-160
AMS 4124	7075	AMS 4230	195
AMS 4125	6151	AMS 4231	195
AMS 4127	6061	AMS 4240	220
AMS 4130	2025	AMS 4260	356
AMS 4132	2618	AMS 4261	356
AMS 4134	2014	AMS 4280	355
AMS 4135	2014	AMS 4281	355
AMS 4136	7079	AMS 4282	H195
AMS 4138	7079	AMS 4283	H195
AMS 4139	7075	AMS 4284	156
AMS 4143	2219	AMS 4285	356
AMS 4144	2219	AMS 4286	356
AMS 4146	6061	AMS 4350	A261A
AMS 4150	6061	AMS 4352	ZK60A
AMS 4152	2024	AMS 4360	A780A
AMS 4153	2014	AMS 4362	ZK60A
AMS 4154	7075	AMS 4363	HM21A
AMS 4155	6062	AMS 4375	A231H
AMS 4156	6063	AMS 4376	A231H
AMS 4158	7178	AMS 4377	A231H
AMS 4160	6061	AMS 4383	HM21A
AMS 4161	6061	AMS 4384	HK31A
AMS 4164	2024	AMS 4385	HK31A
AMS 4165	2024	AMS 4386	LA141A
AMS 4167	7075	AMS 4387	ZK21A
AMS 4168	7075	AMS 4388	HM31A
AMS 4169	7075	AMS 4399	HM31A
AMS 4170	7075	AMS 4390	HM21A
AMS 4171	7079	AMS 4395	A/92A

ALLOYS BY SPECIFICATION

SPECIFICATIONS	RELATED ALLOYS	SPECIFICATIONS	RELATED ALLOYS
AMS 4796	E733A	AMS 4966	TI-5A1-2.5SN
AMS 481A	QF22A	AMS 4967	TI-6A1-4V
AMS 4820	A763A	AMS 4968	TI-5A1-5SN-57H
AMS 4822	A263A	AMS 4969	TI-5A1-1.5CR-1.5FE-1MO
AMS 4824	A263A	AMS 4970	TI-7A1-6MO
AMS 4834	A292A	AMS 4971	TI-6A1-6V-25H
AMS 4837	A791C	AMS 4972	TI-8A1-1MO-1V
AMS 4838	ZH62A	AMS 4973	TI-8A1-1MO-1V
AMS 4842	E733A	AMS 5075	AISI 1025
AMS 4843	7K51A	AMS 5077	AISI 1025
AMS 4844	7K61A	AMS 5112	AISI 1040
AMS 4845	HK31A	AMS 5328	AISI 4330 MOD
AMS 4847	H232A	AMS 5329	AISI 4330 MOD
AMS 4853	A292A	AMS 5340	16-6PH
AMS 4855	AM 100A	AMS 5342	17-6PH
AMS 4883	AM 100A	AMS 5343	17-6PH
AMS 4884	A292A	AMS 5344	17-6PH
AMS 4890	A291A	AMS 5354	GRFEX ASCOLLOY
AMS 4907	TI-6A1-4V ELI	AMS 5355	17-6PH
AMS 4908	TI-8MN	AMS 5359	AM 355
AMS 4909	TI-5A1-2.5SN FLI	AMS 5368	AM 355
AMS 4910	TI-5A1-2.5SN	AMS 5369	19-91L
AMS 4911	TI-6A1-4V	AMS 5372	TYPE 631
AMS 4912	TI-6A1-3MO-1V	AMS 5373	STELLITE 6
AMS 4913	TI-6A1-3MO-1V	AMS 5375	HS22
AMS 4915	TI-8A1-1MO-1V	AMS 5376	N-155
AMS 4917	TI-17V-11CR-3Al	AMS 5378	HS27
AMS 4918	TI-6A1-6V-25N	AMS 5380	HS30
AMS 4923	TI-2CR-2FF-2MO	AMS 5382	X-40
AMS 4924	TI-5A1-2.5SN FLI	AMS 5383	INCONEL ALLOY 718
AMS 4925	TI-6A1-6MN	AMS 5384	UDIMET 500
AMS 4926	TI-5A1-2.5SN	AMS 5385	HS 21
AMS 4928	TI-6A1-4V	AMS 5387	STELLITE 6
AMS 4930	TI-6A1-4V FLI	AMS 5388	HASTELLOY C
AMS 4935	TI-6A1-4V	AMS 5389	HASTELLOY C
AMS 4953	TI-5A1-2.5SN	AMS 5390	HASTELLOY C
AMS 4954	TI-6A1-4V	AMS 5391	ALLOY 718C
AMS 4955	TI-8A1-1MO-1V	AMS 5396	HASTELLOY H
AMS 4965	TI-6A1-4V	AMS 5397	IN-100

ALLOYS BY SPECIFICATION

SPECIFICATIONS	RELATED ALLOYS	SPECIFICATIONS	RELATED ALLOYS
AMS 5398	17-4PH	AMS 5645	N-155
AMS 5399	RENE 41	AMS 5586	WASPALLOY
AMS 5507	AISI 316L	AMS 5587	HASTFLOY X
AMS 5508	GREK ASCOLOY	AMS 5594	HASTFLOY X
AMS 5509	O-979	AMS 5589	INCONEL ALLOY 718
AMS 5520	PH15-740	AMS 5590	INCONEL ALLOY 718
AMS 5522	AISI 314	AMS 5594	AM 355
AMS 5525	A286	AMS 5596	INCONEL ALLOY 718
AMS 5526	19-90L	AMS 5597	INCONEL ALLOY 718
AMS 5527	19-90L	AMS 5598	INCONEL ALLOY X-750
AMS 5528	17-7PH	AMS 5610	AISI 416 SF
AMS 5529	17-7PH	AMS 5616	GREK ASCOLOY
AMS 5530	HASTFLOY C	AMS 5643	17-4PH
AMS 5531	N-155	AMS 5644	17-7PH
AMS 5532	N-155	AMS 5653	AISI 316L
AMS 5533	S-590	AMS 5655	TYPE 422 422
AMS 5534	S-816	AMS 5657	PH15-740
AMS 5536	HASTFLOY X	AMS 5658	15-5PH
AMS 5537	L605	AMS 5659	15-5PH
AMS 5538	19-90X	AMS 5660	INCOLOY ALLOY 901
AMS 5539	19-90X	AMS 5661	INCOLOY ALLOY 901 INCOLOY ALLOY 901 MOD
AMS 5540	INCONEL ALLOY 600	AMS 5662	INCONEL ALLOY 718
AMS 5541	INCONEL ALLOY 727	AMS 5663	INCONEL ALLOY 718
AMS 5542	INCONEL ALLOY X-750	AMS 5664	INCONEL ALLOY 718
AMS 5543	W-545	AMS 5665	INCONEL ALLOY 600
AMS 5544	WASPALLOY	AMS 5667	INCONEL ALLOY X-750
AMS 5545	RENE 41	AMS 5668	INCONEL ALLOY X-750
AMS 5546	AM 350	AMS 5669	INCONEL ALLOY X-750
AMS 5547	AM 355	AMS 5671	INCONEL ALLOY X-750
AMS 5548	AM 350	AMS 5673	17-7PH
AMS 5549	AM 355	AMS 5676	NICHROME V
AMS 5550	INCONEL ALLOY 702	AMS 5677	NICHROME V
AMS 5551	M-252	AMS 5682	NICHROME V
AMS 5552	INCOLOY ALLOY 601	AMS 5684	INCONEL ALLOY 600
AMS 5554	AM 350	AMS 5687	INCONEL ALLOY 600
AMS 5568	17-7PH	AMS 5694	INCONEL ALLOY X-750
AMS 5579	19-90L	AMS 5699	INCONEL ALLOY X-750
AMS 5580	INCONEL ALLOY 600	AMS 5704	WASPALLOY
AMS 5582	INCONEL ALLOY X-750		

ALLOYS BY SPECIFICATION

SPECIFICATIONS	RELATED ALLOYS	SPECIFICATIONS	RELATED ALLOYS
AMS 5706	WASPALLOY	AMS 5770	S-590
AMS 5707	WASPALLOY	AMS 5774	AM 350
AMS 5708	WASPALLOY	AMS 5775	AM 350
AMS 5709	WASPALLOY	AMS 5779	INCONEL ALLOY X-750
AMS 5712	RENF 41	AMS 5780	AM 355
AMS 5713	RENF 41	AMS 5781	AM 355
AMS 5717	PI-333	AMS 5782	16-25-6 19-9 W40 19-9WX
AMS 5720	19-90L	AMS 5783	16-25-6 19-9W40 19-9WX
AMS 5721	19-90L	AMS 5788	STELLITE 6
AMS 5722	19-90L	AMS 5794	N-155
AMS 5723	19-90X	AMS 5795	N-155
AMS 5724	19-90X	AMS 5796	L605
AMS 5725	16-25-6	AMS 5797	L605
AMS 5727	16-25-6	AMS 5798	HASTELLOY X
AMS 5728	16-25-6	AMS 5799	HASTELLOY X
AMS 5729	19-90X	AMS 5800	RENF 41
AMS 5731	A286	AMS 5804	A286
AMS 5732	A286	AMS 5805	A286
AMS 5733	DISCALOY	AMS 5812	PH15-7M0
AMS 5734	A286	AMS 5813	PH15-7M0
AMS 5735	A286	AMS 5817	GRFEX ASCOLOY
AMS 5736	A286	AMS 5825	17-4PH
AMS 5737	A286	AMS 5827	17-4PH
AMS 5741	W-565	AMS 5828	WASPALLOY
AMS 5742	INCOLOY ALLOY 601	AMS 5832	INCONEL ALLOY 718
AMS 5743	AM 355	AMS 6260	AISI 9310
AMS 5744	A 355	AMS 6265	AISI 9310
AMS 5745	AM 350	AMS 6267	AISI 9310
AMS 5746	D-979	AMS 6274	AISI H620
AMS 5750	HASTELLOY C	AMS 6276	AISI H620
AMS 5751	UDIMET 500	AMS 6277	AISI H620
AMS 5753	UDIMET 500	AMS 6280	AISI H630
AMS 5754	HASTELLOY X	AMS 6281	AISI H630
AMS 5756	M-252	AMS 6282	AISI H735
AMS 5757	M-252	AMS 6302	17-22 A (S)
AMS 5759	L605	AMS 6303	17-22 A (V)
AMS 5765	S-816	AMS 6304	17-22A
AMS 5768	N-155		
AMS 5769	N-155		

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ALLOYS BY SPECIFICATION

SPECIFICATIONS	RELATED ALLOYS	SPECIFICATIONS	RELATED ALLOYS
AMS 6320	AISI A735	AMS 6444	AISI 52100
AMS 6322	AISI A740	AMS 6447	AISI 52100
AMS 6323	AISI A740	AMS 6448	AISI 6150
AMS 6324	AISI A740	AMS 6450	AISI 6150
AMS 6325	AISI A740	AMS 6455	AISI 6150
AMS 6327	AISI A740	AMS 6458	17-22 A (S)
AMS 6350	AISI 4130	AMS 6466	TYPE 502
AMS 6351	AISI 4130	AMS 6467	TYPE 502
AMS 6355	AISI A630	AMS 6485	H-11 MODIFIED
AMS 6357	AISI A735	AMS 6487	H-11 MODIFIED
AMS 6358	AISI A740	AMS 6488	H-11 MODIFIED
AMS 6359	AISI 4340	AMS 6530	AISI A630
AMS 6360	AISI 4130	AMS 6535	AISI A735
AMS 6361	AISI 4130	AMS 6541	9NI-4CO-.25C
AMS 6362	AISI 4130	AMS 6542	9NI-4CO-.45C
AMS 6370	AISI 4130	AMS 6546	9NI-4CO-.25C
AMS 6371	AISI 4130	AMS 6550	AISI A630
AMS 6378	AISI 4140	AMS 7220	1100
AMS 6379	AISI 4140	AMS 7223	2024
AMS 6381	AISI 4140	AMS 7232	INCONEL ALLOY 600
AMS 6382	AISI 4140	AMS 7235	A286
AMS 6385	17-22 A (S)	AMS 7236	L605
AMS 6390	AISI 4140	AMS 7237	MASTFLOY X
AMS 6395	AISI 4140	AMS 7240	AISI 1060
AMS 6407	AISI 4330 SI	AMS 7301	AISI 6150
AMS 6412	AISI 4337	AMS 7469	HENE 41
AMS 6413	AISI 4337	AMS 7470	GREEK ASCOLOY
AMS 6414	AISI 4340	AMS 7471	WASPALOY
AMS 6415	AISI 4340	AMS 7478	A286
AMS 6416	300M	AMS 7479	A286
AMS 6418	HY-TUF	AMS 7481	A286
AMS 6427	AISI 4330V	AMS 7811	MO-.5TI
AMS 6431	D6AC	AMS 7813	MO-.5TI
AMS 6434	AISI 4335V	AMS 7817	MO-.5TI
AMS 6436	17-22 A (V)	AMS 7819	MO-.5TI
AMS 6437	H-11 MODIFIED	AMS 7821	MO-.5TI
AMS 6438	D6AC	AMS 7847	TA-10W
AMS 6440	AISI 52100	AMS 7848	TA-10W
AMS 6441	AISI 52100	AMS 7901	98HF-28FO

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ALLOYS BY SPECIFICATION

SPECIFICATIONS	RELATED ALLOYS	SPECIFICATIONS	RELATED ALLOYS
ASTM A453	A286 DISCALOY W-545 19-90L	ASTM H199-63	-CONTINUED AZ91C AZ92A E733A HK31A QF22A
ASTM A457	16-25-6 19-90L 19-90X	ASTM B295	HASTELLOY H HASTELLOY C
ASTM A458	16-25-6 19-90L 19-90X	ASTM H304	HASTELLOY H HASTELLOY C
ASTM A461	AM 355 A286 DISCALOY INCONEL ALLOY X-750 M-252 N-155 PH15-7MO S-81A WASPALLOY 17-4PH 17-7PH	ASTM H333	HASTELLOY H
ASTM A477	16-25-6 19-90L 19-90X	ASTM H334	HASTELLOY C HASTELLOY A
ASTM A494	HASTELLOY H HASTELLOY C	ASTM H335	HASTELLOY H
ASTM A564	PH15-7MO 17-4PH 17-7PH	ASTM H336	HASTELLOY C
ASTM B 80-63	AM 100A A263A AZ91A AZ91C AZ92A E733A HK31A H272A QF22A ZK62A ZK51A ZK61A	ASTM B403 -63T	AM 100A AZ91A AZ91C AZ92A E733A HK31A QF22A ZK61A
ASTM B 90-66	AZ31R HK31A HM21A LA141A ZF10A	ASTM H435	HASTELLOY X
ASTM B 91-63	AZ31R A761A AZ90A ZK60A	ASTM H445	IN-102
ASTM B 92-66	AM 100A	FF-W-84	AISI 1060
ASTM B 93-66	A763A A781A A791A A791C AZ92A	JAN-W-562	INCONEL ALLOY X-750
ASTM B 94-58	AZ91A	MIL-A-1150A	6061
ASTM B107-65	AZ31R A761A AZ90A M1A ZK60A	MIL-A-A701	5083
ASTM B199-63	AM 100A AZ91A	MIL-A-8882	2020
		MIL-A-8920	2219
		MIL-A-8923	ALCLAD 7079 7079
		MIL-A-9183	ALCLAD 7178
		MIL-A-12545	1100 2014 6061
		MIL-A-17357	5154
		MIL-A-17358	5083
		MIL-A-21180	A357 354 357 359
		MIL-A-22771	2014 6061 6062 7075 7079
		MIL-A-25994	6061 6062
		MIL-A-46027C	5083 5456
		MIL-A-46083	5083

ALLOYS BY SPECIFICATION

SPECIFICATIONS	RELATED ALLOYS	SPECIFICATIONS	RELATED ALLOYS
MIL-A-46083	-CONTINUED 5456	MIL-S-8503	AISI 6150
MIL-B-21230	SUPERSTON 40	MIL-S-8690	AISI 8620
MIL-C-21140	A 356 C355	MIL-S-8860	AM 350
MIL-E-6844	INCONEL ALLOY X-750 L605 NICHROME V N-155	MIL-S-8969	DAAC
MIL-M-8916	HM31A	MIL-S-16216	MYR0
MIL-M-8917	HM21A	MIL-S-16538	16-25-6
MIL-M-26075	HK31A	MIL-S-18728	AISI 8630
MIL-M-46037	ZF10A	MIL-S-18729	AISI 4130
MIL-M-46039	ZK21A	MIL-S-18733	AISI 8735
MIL-M-46062	AM 100A A291C A792A HK31A QF22A ZH62A ZK51A ZK61A	MIL-S-25043	17-7PH
MIL-N-6710	INCONEL ALLOY 600	MIL-T-5066	AISI 1025
MIL-N-6840	INCONEL ALLOY 600	MIL-T-6732	AISI 8630
MIL-N-7786	INCONEL ALLOY X-750	MIL-T-6733	AISI 8735
MIL-N-8550	INCONEL ALLOY X-750	MIL-T-6734	AISI 8630
MIL-R-5031	L605 NICHROME V N-155	MIL-T-6736	AISI 4130
MIL-R-5674	1100 2024	MIL-T-7081	6061
MIL-R-6964	A261A A263A A292A F233A H 31A M1A	MIL-T-7840	INCONEL ALLOY 600
MIL-S-5000	AISI 4340	MIL-T-9046	TI (UNALLOYED) TI-4AL-3MO-1V TI-5AL-2.5SN TI-6AL-4V TI-6AL-6V-2SN TI-8AL-1MO-1V TI-HMN TI-13V-11CH-3AL
MIL-S-5059	AISI 301	MIL-T-9047	TI (UNALLOYED) TI-2CR-2FE-2MO TI-4AL-4MN TI-5AL-1.5CR-1.5FE-1MO TI-5AL-2.5SN TI-5AL-2.5SN-ELI TI-5AL-5SN-57R TI-6AL-2SN-47R-2MO TI-6AL-4V TI-6AL-4V-FLI TI-6AL-6V-2SN TI-7AL-4MO TI-8AL-1MO-1V TI-13V-11CH-3AL TI-679
MIL-S-5626	AISI 4140	MIL-A-6712	1100
MIL-S-6049	AISI 8740	QQ-A-200/2	2014
MIL-S-6050	AISI 8630	QQ-A-200/3	2024
MIL-S-6098	AISI 8735	QQ-A-200/4	5083
MIL-S-6709	NITRALLOY 135 MON.	QQ-A-200/5	5086
MIL-S-6758	AISI 4130	QQ-A-200/6	5454
MIL-S-7047	AISI 1025	QQ-A-200/7	5456
MIL-S-7108	HY-TUF	QQ-A-200/11	7075
MIL-S-7952	AISI 1025	QQ-A-200/12	7079
MIL-S-7420	AISI 52100	QQ-A-200/13	717A

ALLOYS BY SPECIFICATION

SPECIFICATIONS	RELATED ALLOYS	SPECIFICATIONS	RELATED ALLOYS
QQ-A-225/4	2014	QQ-M-3A	AZ91A
QQ-A-225/5	2017	QQ-M-40	AZ61A AZ80A M1A ZK60A
QQ-A-225/6	2024	QQ-M-44	AZ31B
QQ-A-225/9	7075	QQ-M-55	AM 100A AZ63A AZ91A AZ91C AZ92A E733A MK31A M232A QF22A
QQ-A-250/3	2014	QQ-M-56	AZ63A AZ71A AZ91C AZ92A E233A MK31A M232A QF22A ZM62A ZK51A ZK61A
QQ-A-250/4	2024	QQ-W-390	INCONEL ALLOY 600
QQ-A-250/5	2024	QQ-W-470	AISI 1040
QQ-A-250/6	5083	SAE 500	AZ92A
QQ-A-250/7	5086	SAE 502	AM 100A
QQ-A-250/9	5454	SAE 504	AZ91C
QQ-A-250/10	5454	SAE 505	AZ91A
QQ-A-250/12	7075	SAE 506	E733A
QQ-A-250/13	7075	SAE 507	MK31A
QQ-A-250/14	7178	SAE 508	ZM62A
QQ-A-250/15	7178	SAE 509	ZK51A
QQ-A-250/17	7079	SAE 510	AZ31B
QQ-A-270	6061 6062	SAE 513	ZK61A
QQ-A-287	ALCLAD 7075	SAE 520	AZ61A
QQ-A-315	5052	SAE 522	M1A
QQ-A-318	5052	SAE 523	AZ80A
QQ-A-325	6061 6062	SAE 524	ZK60A
QQ-A-327	6061	MM-T-700	1100 3003 5052 6061
QQ-A-359	3003	MM-T-700/3	2024
QQ-A-362	ALCLAD 2024	MM-T-789	5086 6062
QQ-A-367	2025 2618 6061 6151	MM-T-825	AZ31B AZ61A M1A ZK60A
QQ-A-430	5056		
QQ-A-561	1100		
QQ-A-596	R195 355 356		
QQ-A-601	ALM G 35 40-E 195 220 354 355 356 357 359		
QQ-M-31	AZ31B AZ61A AZ80A M1A ZK60A		

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13. ABSTRACT This document presents a computer-generated listing of principal alloys of interest in defense work. Included in the listing are alloy designations, specifications, and nominal compositions. Because the report is machine generated, it is intended to be updated frequently in order to keep up with new alloys and specifications. This Memorandum updates DMIC Memorandum 223, which was published April 12, 1967.			

14	KEY WORDS	LINK A		LINK B		LINK C	
		ROLE	WT	ROLE	WT	ROLE	WT
	Aluminum Beryllium Chromium Cobalt Columbium Iron (Superalloys) Magnesium Molybdenum Nickel Steel Tantalum Titanium Alloy Designations Chemical Composition						
	Alloys Specifications						

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