

AEROSPACE AND HIGH PERFORMANCE ALLOYS DATABASE (AHAD)

GRADE UNS

STAINLESS STEELS

Austenitic

| | |
|---|----------------------------------|
| 19-9DL | J92843/K63198/K63199 |
| 20Cb-3[®], INCOLOY[®] 20 | N08020 |
| 203EZ | S20300 |
| 21-6-9 | S21904 |
| 22Cr-13Ni-5Mn, NITRONIC[®] 50 | S20910 |
| 254 SMO | S31254 |
| 654 SMO | S32654 |
| 904L | N08904 |
| AL-6XN | N08367 |
| CF8C-Plus | J92604 |
| Datalloy 2[®], 15-15 HS & LC, SCF 260 | None |
| INCOLOY[®] 28 | N08028 |
| Nitronic [®] 60 | S20162/S21800 |
| Type 201 | S20100 |
| Types 301 & 302 | S30100/S30200 |
| Types 303/303 Se | S30300/S30323 |
| Types 304/304L | S30400/S30403 |
| Type 305 | S30500 |
| Types 310/310S | S31000/S31008 |
| Type 314 | S31400 |
| Types 316 & 317 | S31600/S31603 & S31700/S31703 |
| Type 321 | S32100 |
| Types 347 & 348 | S34700/S34800 |

Martensitic

| | |
|----------------------------|----------------------|
| 410Cb | S41040 |
| 9Cr-1Mo | S50400 |
| AM-363 | S36300 |
| F6NM, 1.4313 | S41500 |
| Ferrium S53 | S10500 |
| Greek Ascology | S41800 |
| Types 403, 410 & 416 | S40300/S41000/S41600 |
| Type 420 | S42000 |
| Type 422 | S42200 |
| Type 431 | S43100 |
| Type 440 A/B/C & F | S44002(A)/S44004(C) |

Precipitation Hardening

| | |
|-------------------------------------|---------------|
| 15-5 PH [®] | J92110/S15500 |
| 17-4 PH | S17400 |
| 17-7 PH | S17700 |
| AFC77 | S65770 |
| AM 362 | None |
| AM 350 [®] | S35000 |
| AM 355 | S35500 |
| Custom 455 [®] | S45500 |
| Custom 465[®] | S46500 |
| HNM | None |
| PH13-8MO | S13800 |
| PH14-8MO | S14800 |
| PH15-7MO | S15700 |
| Stainless W | None |

GRADE UNS

STAINLESS STEELS (continued)

Duplex

| | |
|--|------------------------------------|
| Lean duplex family 2202, 2003, 2304, 2102 | S32202/S32003/S32304/S82011 |
| 2205 | S31803/S32205 |
| 2507, 4501, Zeron 100 | S32750/S32760 |
| FERRALLIUM[®] 255 | S32550 |

Ferritic

| | |
|-----------------------------------|---------------|
| AL 29-4C | S44735 |
| 430 | S43000 |
| INCOLOY [®] MA 956 | S67956 |

ALUMINUM ALLOYS

Cast

| | |
|------------------|---------------|
| 355/C355 | A33550 |
| 380 | A13380 |
| 390 | A13390 |
| A201 | A02010 |
| A356/356 | A03560/A13560 |
| A357 | A13570 |

Wrought/Heat Treatable

| | |
|------------------------|---------------|
| 2014 & Clad 2014 | A92014 |
| 2024 | A92024 |
| 2024 Clad | A92024 |
| 2048 | A92048 |
| 2090 | A92090 |
| 2098 | None |
| 2124 | A92124 |
| 2195 | A92095 |
| 2219 & Clad 2219 | A92219 |
| 2297 | None |
| 2519 | A92519 |
| 2618 | A92618 |
| 6013 | A96013 |
| 6061 | A96061 |
| 6069 | A96069 |
| 6082 | A96082 |
| 7005 | A97005 |
| 7049 | A97049 |
| 7050 | A97050 |
| 7055 | A97055 |
| 7075 & Clad 7075 | A97075 |
| 7085 | None |
| 7129/7029 | A97129 |
| 7150 | A97150 |
| 7175 | A97175 |
| 7475 | A97475 |
| 8090 | A98090 |

GRADE UNS

ALUMINUM ALLOYS (continued)

Wrought/Non-Heat Treatable

| | |
|-------------|--------|
| 5052 | A95052 |
| 5059 | A95059 |
| 5083 | A95083 |
| 5090 | None |
| 5456 | A95456 |
| 905XL | None |

LOW ALLOY STEELS

| | |
|-----------|------|
| T-1 | None |
|-----------|------|

ULTRA HIGH STRENGTH STEELS

| | |
|---------------------------------|----------------------|
| 17-22A(S)/17-22A(V) | K23015 |
| 18Ni Maraging (200 Grade) | K92810 |
| 18Ni Maraging (250 Grade) | K92890/K92940 |
| 18Ni Maraging (300 Grade) | K93120/K93160 |
| 300-M | K44220/K44540 |
| 4130 | G41300 |
| 4140 | G41400/J14046 |
| 4330V | J23260/K23080 |
| 4335V Mod | K33517 |
| 4340 | G43400 |
| 52100 | G52986 |
| 8630 | G86300/J13042/J13050 |
| 9Ni Steel | K81340 |
| 9Ni-4Co | K91283 |
| AerMet 100 | K92580 |
| AF 1410 | K92571 |
| D6A/D6AC | K24728/K24729 |
| E9310 | G93106 |
| H-11 Mod | T20811 |
| H-13 | T20813 |
| Hy-130/140/5Ni-Cr-Mo-V | K51255 |
| Hy-Tuf | K32550 |
| M50/M50 NiL Steels | K88165/T11350 |
| Maraging T-250 | K92150 |
| Nitralloy 135 Mod | K24065 |

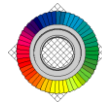
COBALT ALLOYS

| | |
|--|--------|
| HAYNES [®] 188 | R30188 |
| L-605, HAYNES [®] 25 | R30605 |
| Mar-M-509 | None |
| STELLITE [®] 21 | R30021 |
| STELLITE [®] 6 | R30006 |
| VM-103 | None |
| WI-52 | None |
| X40/X45 (STELLITE [®] 31) | R30031 |

TUNGSTEN ALLOYS

| | |
|-------------------------|------|
| Commercially Pure | None |
| W-HfC & W-4Re-HfC | None |

**BOLD = High Performance Alloys Database
only alloys**



AEROSPACE AND HIGH PERFORMANCE ALLOYS DATABASE (AHAD)

GRADE UNS

NICKEL BASED ALLOYS <5% CO

| | |
|----------------------|--------|
| Custom Age 625 Plus® | N07716 |
| D979 | N09979 |
| HASTELLOY® B-3® | N10675 |
| HASTELLOY® C-22HS® | N07022 |
| HASTELLOY® C-276 | N10276 |
| HASTELLOY® C-2000® | N06200 |
| HASTELLOY® X | N06002 |
| HAYNES® G-35® | N06035 |
| HAYNES® 230® | N06230 |
| HAYNES® 242® | None |
| HAYNES® HR-160® | N12160 |
| INCOLOY® 601 | N06601 |
| INCOLOY® 825 | N08825 |
| INCOLOY® 901 | N09901 |
| INCOLOY® 925 | N09925 |
| INCONEL® 600 | N06600 |
| INCONEL® 625 | N06625 |
| INCONEL® 690 | N06690 |
| INCONEL® 702 | N07702 |
| INCONEL® 706 | N09706 |
| INCONEL® 713 LC | N07713 |
| INCONEL® 713C | N07713 |
| INCONEL® 718 | N07718 |
| INCONEL® 722™ | N07722 |
| INCONEL® MA 6000 | None |
| INCONEL® MA 754 | N07754 |
| INCONEL® X-750 | N07750 |
| MONEL® K-500 | N05500 |
| NIMONIC® 80A | N07080 |
| RA-333 | N06333 |
| TD Nickel | N03260 |
| TD NiCr | None |

NICKEL CHROMIUM STEELS

| | |
|-----------------|---------------|
| 16-15-6 | None |
| 20Mo-6® HS | N08036 |
| HAYNES® HR-120® | N08120 |
| INCOLOY® | None |
| INCOLOY® 800 | N08800 |
| INCOLOY® 800H | N08810 |
| INCOLOY® 801 | N08801 |
| INCOLOY® 802 | N08802 |
| INCOLOY® A-286 | K66286/S66286 |
| N-155 | R30155 |
| NASA-23 | None |
| NASA-HR-1 | None |
| RA330 | N08330 |
| RA-330HC | None |
| V-57 | None |

COPPER ALLOYS

| | |
|----------|------|
| GRCop-84 | None |
|----------|------|

GRADE UNS

NICKEL BASED ALLOYS >5% CO

| | |
|--------------|---------------|
| ATI 718Plus® | N07818 |
| ATI M-252™ | N07252 |
| B-1900 | None |
| CMSX-4® | None |
| HAYNES® 263 | N06231/N07263 |
| HAYNES® 282® | N07208 |
| IN® 100 | N13100 |
| IN-738 | None |
| INCOLOY® 909 | N19909 |
| INCONEL® 617 | N06617 |
| INCONEL® 783 | R30783 |
| Mar-M-246 | None |
| Mar-M-247® | None |
| MP35N® | R30035 |
| Nicrotung | None |
| NIMONIC® 105 | None |
| NIMONIC® 115 | None |
| NIMONIC® 90 | N07090 |
| René® 41 | N07041 |
| René® 80 | None |
| René® 95 | None |
| UDIMET® 500 | N07500 |
| UDIMET® 700 | None |
| UDIMET® 720 | None |
| WASPALLOY™ | N07001 |

TITANIUM ALLOYS

Wrought

| | |
|-------------------|---------------------------------|
| Commercially Pure | R50250/R50400/ R50550/R50700 |
| 10-2-3 | R56410 |
| 15-3 | None |
| 17 | R58650 |
| 1Al-8V-5Fe | None |
| 21S | R58210 |
| 3Al-2.5V | R56320 |
| 38-644 | R58640 |
| 48-2-2 | None |
| 5Al-2.5Sn | R54520/R54521 |
| 6-2-2-2-2 | R56222 |
| 6-2-4-2 | R54620 |
| 6-2-4-6 | R56260 |
| 6-6-2 | R56620 |
| 679 | R54790 |
| 6Al-2Cb-1Ta-0.8Mo | R56210 |
| 6Al-4V | R53400/R56400/R56401 |
| 7Al-4Mo | R56740 |
| 8Al-1Mo-IV | R54810 |
| 8Mn | R56080 |
| 8Mo-8V-2Fe-3Al | None |
| B120 VCA | None |
| Beta III | R58030 |

Cast

| | |
|-------------|---------------|
| 6Al-4V/Cast | R56400/R56401 |
|-------------|---------------|

GRADE UNS

MAGNESIUM ALLOYS

Cast

| | |
|--------|---------------|
| AM100A | M10100 |
| AZ63A | M11630 |
| AZ91 | M11910 |
| AZ92A | M11920 |
| EZ33A | M12330 |
| HZ32A | M13320 |
| QE22A | M18220/M18221 |
| ZH62A | M16620 |
| ZK51A | M16510/M16511 |
| ZK61A | M16610/M16611 |

Wrought/Heat Treatable

| | |
|--------|--------|
| AZ80A | M11800 |
| EK31XA | None |
| HK31A | M13310 |
| HM21A | M13210 |
| HM31A | M13312 |
| LA91A | None |
| ZK60A | M16600 |

Wrought/Non-Heat Treatable

| | |
|--------------|---------------|
| AZ31A, C & D | M11311/M11312 |
| AZ31B | M11311/M11312 |
| AZ61A | M11610 |
| ZE10A | M16100 |

BERYLLIUM ALLOYS

| | |
|-----------|------|
| Beryllium | None |
| Lockalloy | None |

COLUMBIUM (NIOBIUM) ALLOYS

| | |
|-------------------|--------|
| Commercially Pure | None |
| B-66 | S31266 |
| Cb-129 Y | None |
| Cb-132/132M | None |
| Cb-752 | None |
| FS-85 | None |

MOLYBDENUM ALLOYS

| | |
|-------------------|--------|
| Commercially Pure | None |
| Mo-0.5Ti | None |
| TZM | R03630 |

TANTALUM ALLOYS

| | |
|-------------------|--------|
| Commercially Pure | None |
| T-111 | None |
| T-222 | None |
| Ta-10W | R05255 |

ZIRCONIUM ALLOYS

| | |
|------------|---------------|
| 702, 705 | R60702/R60705 |
| Zircaloy-2 | R60802 |

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only alloys**