



TECHNICAL INFORMATION

ISO 13399 Terms
 Hardness Conversion Table
 Material Groups
 Comparison Chart
 Search

Technical Information ISO 13399 Terms

| | | | |
|---------------|---------------------------------------|--------------|---|
| AN | Clearance angle major | INSD | Insert diameter |
| APMX | Depth of cut maximum | KAPR | Tool cutting edge angle |
| AS | Clearance angle wiper edge | KRINS | Cutting edge angle major |
| B | Shank width | KWW | Keyway width |
| BS | Wiper edge length | L | Cutting edge length |
| CBDP | Connection bore depth | LE | Cutting edge effective length |
| CDX | cutting depth maximum | LF | Functional length |
| CICT | Number of Inserts | LH | Head length |
| CW | Cutting width | LS | Shank length |
| CZC | Connection size code | LU | Usable length |
| DC | Cutting diameter | LUX | Usable length maximum |
| DCON | Connection diameter | M | Nose (or Wiper) Height |
| DCSFMS | Contact surface diameter machine side | OAL | Overall length |
| DCX | Cutting diameter maximum | RE | Corner radius |
| DMIN | Minimum bore diameter | RMPX | Maximum ramping angle |
| DMM | Shank diameter | RPMX | Rotational speed maximum |
| EPSR | Insert included angle | S | Insert thickness |
| H | Shank height | TDZ | Thread diameter size |
| HAND | Hand | WF | Functional width |
| IC | Inscribed circle diameter | ZAFP | Peripheral effective cutting edge count |

Technical Information Hardness Conversion Table

| HB | HRC | HRB | HV | N/mm ² |
|-----|-----|-----|-----|-------------------|
| 199 | 15 | 93 | 199 | 667 |
| 203 | 16 | 94 | 201 | 680 |
| 208 | 17 | 95 | 210 | 696 |
| 212 | 18 | 95 | 218 | 706 |
| 216 | 19 | 96 | 222 | 716 |
| 223 | 20 | 97 | 227 | 755 |
| 229 | 21 | 98 | 235 | 775 |
| 233 | 22 | 99 | 241 | 794 |
| 240 | 23 | 100 | 247 | 824 |
| 245 | 24 | 100 | 252 | 838 |
| 250 | 25 | 101 | 255 | 853 |
| 255 | 26 | 102 | 258 | 870 |
| 262 | 27 | 103 | 262 | 880 |
| 264 | 28 | 103 | 271 | 892 |
| 271 | 29 | 104 | 277 | 941 |
| 277 | 30 | 105 | 285 | 971 |
| 290 | 31 | 106 | 292 | 990 |
| 300 | 32 | 107 | 303 | 1020 |
| 308 | 33 | 107 | 311 | 1035 |
| 314 | 34 | 108 | 320 | 1049 |
| 322 | 35 | 108 | 332 | 1089 |
| 331 | 36 | 109 | 342 | 1118 |
| 341 | 37 | 109 | 351 | 1157 |
| 348 | 38 | 110 | 361 | 1187 |
| 360 | 39 | 111 | 376 | 1236 |
| 373 | 40 | 111 | 388 | 1265 |
| 375 | 41 | 112 | 393 | 1314 |
| 388 | 42 | 113 | 406 | 1363 |
| 402 | 43 | 114 | 424 | 1390 |
| 415 | 44 | 114 | 438 | 1422 |
| 419 | 45 | 114 | 448 | 1447 |
| 430 | 46 | 115 | 458 | 1471 |
| 445 | 47 | 115 | 474 | 1520 |
| 456 | 48 | 116 | 490 | 1569 |
| 468 | 49 | 117 | 497 | |
| 469 | 50 | 117 | 505 | |
| 486 | 51 | 118 | 531 | |
| 504 | 52 | 118 | 549 | |
| 513 | 53 | 119 | 567 | |
| 534 | 54 | 120 | 589 | |
| 552 | 55 | | 649 | |
| 572 | 56 | | 694 | |
| 592 | 57 | | 727 | |
| 601 | 58 | | 746 | |
| 613 | 59 | | | |
| 627 | 60 | | | |
| 642 | 61 | | | |
| 658 | 62 | | | |
| 681 | 63 | | | |
| 695 | 64 | | | |
| HB | HRC | HRB | HV | N/mm ² |

Technical Information Material Groups

Please visit
global.yg1.com/mat
 for material search

| ISO | VDI 3323 | Material Description | Composition / Structure / Heat Treatment | HB | HRC | Examples | Page | |
|-----|---------------------------------|---|--|--------|--------------------|-----------------------------|------|---------------------------------|
| P | 1 | Non-alloyed steel | About 0.15% C Annealed | 125 | | S15C, C15, 1015 | 152 | |
| | 2 | | About 0.45% C Annealed | 190 | 13 | S45C, C45, 1045 | | |
| | 3 | | About 0.45% C Quenched & tempered | 250 | 25 | | | |
| | 4 | | About 0.75% C Annealed | 270 | 28 | | | |
| | 5 | About 0.75% C Quenched & Tempered | 300 | 32 | SK5, Ck75, 1080 | | | |
| | 6 | Low-alloyed Steel | | 180 | 10 | SCM440, 42CrMo4, 410 | | |
| | 7 | | | 275 | 29 | | | |
| | 8 | | | 300 | 32 | | | |
| | 9 | | | 350 | 38 | | | |
| | 10 | High-alloyed steel, and tool steel | | 200 | 15 | SKD, D2 | | |
| | 11 | | | 325 | 35 | SKH, SUH, M42 | | |
| M | 12 | Stainless Steel | Ferritic / Martensitic Annealed | 200 | 15 | SUS 420, X40Cr13, 420 | 159 | |
| | 13 | | Martensitic Quenched & Tempered | 240 | 23 | | | |
| | 14 | | Austenitic | 180 | 10 | | | SUS 316, 316, X5CrNiMo 17 12 2 |
| K | 15 | Grey cast iron | Pearlitic / Ferritic | 180 | 10 | FC, GG, EN-GJL-250 | 161 | |
| | 16 | | Pearlitic (Martensitic) | 260 | 26 | | | |
| | 17 | Nodular cast iron | Ferritic | 160 | 3 | FCD, GGG, EN-GJS-500-7 | | |
| | 18 | | Pearlitic | 250 | 25 | | | |
| | 19 | Malleable cast iron | Ferritic | 130 | | FCMW, FCMP, GTS, GJMB350-10 | | |
| 20 | Pearlitic | | 230 | 21 | | | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | 60 | | SAE 1000, AIMg 1, 3.3315 | 163 | |
| | 22 | | Curable Hardened | 100 | | SAE 7050, AlCuMg 1, 3.1325 | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | 75 | | ADC12, G-AlSi12, 3.2581 | | |
| | 24 | | ≤ 12% Si, Curable Hardened | 90 | | C4BS, G-AlSi10Mg, 3.2381 | | |
| | 25 | | > 12% Si, Not Curable | 130 | | | | |
| | 26 | Copper and copper alloys (Bronze / Brass) | Cutting Alloys, PB>1% | 110 | | CuZn36Pb 3, 2.0375 | | |
| | 27 | | CuZn, CuSnZn (Brass) | 90 | | CuZn 15, 2.0240 | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | 100 | | G-CuZn40Fe, 2.0590 | | |
| | 29 | Non-metallic materials | Duroplastic, Fiber Reinforced Plastic | | | CFRP | | |
| | 30 | | Rubber, Wood, etc. | | | | | |
| S | 31 | Heat resistant super alloys | Fe Based Annealed | 200 | 15 | X12 NiCrSi 36-16, 1.4864 | 165 | |
| | 32 | | | 280 | 30 | | | |
| | 33 | | | 250 | 25 | | | Inconel 718, NiCr20TiAl, 2.4631 |
| | 34 | | Ni or Co Based Annealed | 350 | 38 | | | NiCu30Al, 2.4375 |
| | 35 | | 320 | 34 | G-X120Mn12, 1.3401 | | | |
| | 36 | Titanium alloys | Pure Titanium | 400 Rm | | TiAl6V4, 3.7165 | | |
| 37 | Alpha + Beta Alloys Hardened | | 1050Rm | | | | | |
| H | 38 | Hardened steel | | 550 | 55 | SK3 | 167 | |
| | 39 | | | 630 | 60 | | | |
| | 40 | Chilled cast iron | | 400 | 42 | | | |
| | 41 | Hardened cast iron | | 550 | 55 | | | |

Technical Information
Material Groups

Please visit global.yg1.com/mat for material search

| Mat'l No. | JIS | DIN | Material Description | | | | | Composition / Structure / Heat Treatment | | | | | HB | HRC |
|-----------|--------------|----------------|----------------------|------------|-------------|--------------|-------|--|-----------|--------|--------|--------|----|-----|
| | | | Non-alloyed steel | | | | | About 0.15% C, Annealed | | | | | | |
| | | | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | Brands | | |
| 1.0037 | SKM 12 C | St 37-2 | - | 4360 40 B | S235JR | E24-2 | 1311 | Fe 360 B | | | 16D | | | |
| 1.0038 | SKM 12 A | St 37-3 | A570.36 | 4360 40 C | S275J2G3 | E28-3 | 1312 | Fe 360 D FF | | | ST14KP | | | |
| 1.0045 | SM 490 YA | S 355 JR | - | - | S 1207 | E36-2 | - | Fe 510 BFN | | | | | | |
| 1.0050 | SS 50 | St 50-2 | A570 Gr.50 | 4360 50 B | E 295 | A50-2 | 2172 | Fe 490 | | | ST5PS | | | |
| 1.0060 | SM 58 | St 60-2 | A572 Gr.65 | 4360 55 E | - | A60-2 | 1650 | Fe 60-2 | | | ST6PS | | | |
| 1.0114 | | S 235 JO | - | En 40C | S 235 JO | E24-3 | | Fe 360 CFN | | | | | | |
| 1.0143 | | S 275 JO | - | - | S 275 JO | E28-3 | 1414 | Fe 430 C | | | | | | |
| 1.0144 | SM41C, SM400 | St 44-3 N | A573 Gr. 81 | 4360 43C | S 275 J2 G3 | E28-3 | 1412 | Fe 430 D FF | | | ST14KP | | | |
| 1.0149 | | Ro St 44-2 | - | 43C | S 275 JOH | - | 1412 | Fe430C | | | | | | |
| 1.0301 | S10C | C10 | 1010 | 045M10 | C10 | 34C10, XC10 | | C10 | F1511 | G10100 | 10 | | | |
| 1.0330 | SPCC | St 12 | - | DC01 | Fe P01 | DC01/FeP01 | 1142 | Fe P01 | | | 15KP | | | |
| 1.0335 | SPHE | D D 13 (SW 24) | A622(1008) | H 5 3 | D D 13 | 3C | | FeP13 | | | 08KP | | | |
| 1.0338 | SPCE | St 4 | A620(1008) | 14491 CR | Fe P04 | Fe 14 | 1147 | DC04/FeP04 | | | 08JU | | | |
| 1.0345 | SPV 50 | P235 GH | A516 Gr.65 | P 235 GH | P 235 GH | A 37 CP | 1330 | Fe E 235 | | | K02503 | | | |
| 1.0401 | S15C | C15 | 1015 | 090M15 | - | C18RR, XC18 | 1350 | C15, C16 | F1110 | G10170 | 15 | | | |
| 1.0402 | S20C | C22 | 1020 | 050 A 20 | 1 C 22 | C20 | 1450 | C 20 | F1120 | G10200 | 20 | | | |
| 1.0425 | SPV315 | P265GH/HII | | | A42CP | 1430 | | Fe4101KW | | | K02801 | 16K | | |
| 1.0443 | SC 450 | GS45 | A2765-35 | A1 | | E23-45M | 1305 | | | | | | | |
| 1.0539 | | S355NH | | | | TSE355-4 | 2134 | Fe510B | | | | | | |
| 1.0545 | | S355N | | 4360-50E | | E355R | 2334 | FeE355KG | | | | | | |
| 1.0546 | | S355NL | | 4360-50EE | | E355FP | 2135 | FeE355KT | | | | | | |
| 1.0547 | | S355J0H | | 4360-50C | | TSE355-3 | 2172 | Fe510C | | | | | | |
| 1.0549 | | S355NLH | | | | | 2135 | Fe510D | | | | | | |
| 1.0553 | SM 520 M | S15-3U | A14880-40 | 4360-50C | | 320-560M | 1606 | Fe510C | | | | | | |
| 1.0562 | SM490A | St E 355 | A633 Gr. C | P 355 N | | FeE355KGN | 2132 | Fe E 355 KG | | | K12000 | 15GF | | |
| 1.0565 | | W St E 355 | | P 355 NH | | P 355 NH | 2106 | Fe E 355 KW | | | K01600 | | | |
| 1.0566 | SLA 37 | T St E 355 | | P 355 NLI | | P 355 NLI | 2107 | Fe E 355 KT | | | | | | |
| 1.0570 | SM 50 YA | St 52-3 | 1 | 4360-50 C | S355JR | E36-3 | 2172 | Fe 510 B | | | 17G1S | | | |
| 1.0715 | SUM22 | 95Mn28 | 1213 | 230M07 | | S250 | 1912 | CF95Mn28 | F2111 | G12130 | | | | |
| 1.0718 | SUM22L | 95MnPb28 | 12L13 | | | S250Pb | 1914 | CF95MnPb28 | F2112 | G12134 | | | | |
| 1.0721 | | 10S20 | 1108 | 10S20 | | CF10S20 | F2121 | G11080 | | | | | | |
| 1.0722 | | 10SPb20 | 11L08 | | | CF10SPb20 | F2121 | G11084 | | | | | | |
| 1.0736 | SUM25 | 95Mn36 | 1215 | | | S300 | F2113 | G12150 | | | | | | |
| 1.0737 | | 95MnPb36 | 12L14 | | | S300Pb | 1926 | CF95MnPb36 | F2114 | G12144 | | | | |
| 1.0972 | | S315MC | | 1501-40F30 | | E315D | | | | | | | | |
| 1.0976 | | S355MC | | 1501-43F35 | | E355D | 2642 | FeE355TM | | | | | | |
| 1.0982 | | S460MC | | 1501-50F45 | | | | | | | | | | |
| 1.0984 | | S500MC | | | | E490D | 2662 | FeE490TM | | | | | | |
| 1.0986 | | S500MC | | 1501-50F55 | | E560D | | FeE560TM | | | | | | |
| 1.1121 | S10C | Ck10 | 1010 | 040A10 | | XC10 | 1265 | C10 | F1510 | G10100 | 10 | | | |
| 1.1141 | S15 | Ck15 | 1015 | 040A15 | 32C | XC15 | 1370 | C15 | F1110 | G10150 | 15 | | | |
| 1.1151 | S20C | C22E | 1020 | 055M15 | | 2C22 | 1450 | C20 | F1120 | G10230 | 20 | | | |
| 1.8900 | S25C | StE380 | A572-60 | 436055E | | | 2145 | FeE390KG | | | | | | |
| | | St44-2 | A36 | 436043A | | NFA35-501E28 | 1411 | | | | | | | |
| | | StE320-3Z | | 1501160 | | | 1421 | | | | | | | |

Technical Information
Material Groups

Please visit global.yg1.com/mat for material search

| Mat'l No. | JIS | DIN | Material Description | | | | | Composition / Structure / Heat Treatment | | | | | HB | HRC |
|-----------|-----------|---------------|----------------------|---------------|-----|----------|----------|--|-----------|--------|--------|--------|----|-----|
| | | | Non-alloyed steel | | | | | About 0.45% C, Annealed | | | | | | |
| | | | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | Brands | | |
| 1.0501 | S35C | C35 | 1035 | 080A32 | | 1C35 | 1572 | C35 | F113 | G10350 | 35 | | | |
| 1.0503 | S45C | C45 | 1045 | 060A47 | | XC42H1TS | 1672 | C45 | F114 | G10450 | 45 | | | |
| 1.0511 | S40C | C40 | 1040 | 080M40 | | 1C40 | | C40 | F114A | G10400 | 40 | | | |
| 1.0540 | S 50 C | C50 | | | | | 1674 | C50 | | G10500 | | | | |
| 1.0551 | | GS-52 | A2770-36 | A2 | | | 280-480M | 1505 | | | | | | |
| 1.0553 | SM 520 M | S15-3U | A14880-40 | 4360-50C | | 320-560M | 1606 | Fe510C | | | | | | |
| 1.0577 | | S 355 J 2 G 4 | A738 | Fe 510 D 2 FF | | A52FP | | 2107 | | | | | | |
| 1.0726 | | 35520 | 1140 | 212M36 | 8M | 35MF6 | | 1957 | | | G11400 | 40 | | |
| 1.0727 | | 45520 | 1146 | | | 45MF4 | | 1973 | | | G11460 | | | |
| 1.1157 | | 40Mn4 | 1039 | 150M36 | 15 | 40M5 | | | | | G10390 | 40G | | |
| 1.1158 | S25C | C25E | 1025 | 070M25 | | XC25 | | C25 | F1120 | G10250 | 25 | | | |
| 1.1166 | SMn433H | 34Mn5 | 1536 | | | | | | TO:B | | G15360 | | | |
| 1.1167 | SMn438(H) | 36Mn5 | 1335 | 150M36 | | 40M5 | 2120 | 36Mn6 | F1203 | G13350 | 35G2 | | | |
| 1.1170 | SCMn1 | 28Mn6 | 1330 | 150M28 | 14A | 20M5 | | C28Mn | 28Mn6 | G13300 | 30G | | | |
| 1.1178 | S 30 C | C30E | | 080M30 | | XC32 | | C30 | C2C3 | G10300 | | | | |
| 1.1180 | | C35R | 1035 | 080A35 | | 3C35 | 1572 | | F1135 | G10350 | | | | |
| 1.1181 | S35C | C35E | 1035 | 080A35 | | XC38 | 1572 | C36 | F1130 | G10340 | 35 | | | |
| 1.1191 | S45C | Ck45 | 1045 | 080A46 | | XC45 | 1672 | C45 | F1140 | | 45 | | | |
| 1.1206 | S 50 C | C50E | 1050 | 080M50 | | 2C50 | 1674 | C50 | | G10500 | 50 | | | |
| 1.1213 | S50C | CF53 | 1050 | 070M55 | | XC48HTS | 1674 | C53 | | G10500 | 50 | | | |

| Mat'l No. | JIS | DIN | Material Description | | | | | Composition / Structure / Heat Treatment | | | | | HB | HRC |
|-----------|-----------|------------------|----------------------|----------|----------|--------------|------|--|-----------|--------|--------|--------|----|-----|
| | | | Non-alloyed steel | | | | | About 0.45% C, Annealed | | | | | | |
| | | | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | Brands | | |
| 1.0481 | SG365 | 17 Mn 4/P 295 GH | A516 Gr.70 | 224-460B | P 295 GH | A 48 CP | 2102 | Fe E 295 | A47RC1 | K03501 | 14G2 | | | |
| 1.0501 | S35C | C35 | 1035 | 080A32 | | 1C35 | 1572 | C35 | F1130 | G10350 | 35 | | | |
| 1.0503 | S45C | C45 | 1045 | 060A47 | | XC42H1TS | 1672 | C45 | F1140 | G10450 | 45 | | | |
| 1.0614 | | C76D | 1074 | | | XC75 | | | | G10750 | | | | |
| 1.0616 | | C86D | 1086 | | | XC80 | | C85 | | G10860 | | | | |
| 1.0618 | | C92D | 1095 | | | XC90 | | | | G10950 | | | | |
| 1.0726 | | 35520 | 1140 | 212M36 | 8M | 35MF6 | | 1957 | | | G11400 | 40 | | |
| 1.1157 | | 40Mn4 | 1039 | 150M36 | 15 | 40M5 | | | | | G10390 | 40G | | |
| 1.1165 | SMn433H | 30Mn5 | 1036 | 120M36 | | 35M5 | | 30Mn5 | F8211 | K13300 | 30G2 | | | |
| 1.1167 | SMn438(H) | 36Mn5 | 1335 | 150M36 | | 40M5 | 2120 | 36Mn6 | F1203 | G13350 | 35G2 | | | |
| 1.1186 | S40C | C40E | 1040 | 060A40 | | 2C40 | | C40 | | G10400 | | | | |
| 1.1191 | S45C | Ck45 | 1045 | 080M46 | | 2C45 | 1672 | C45 | F1140 | | 45 | | | |
| 1.1201 | S50C | C45R | 1049 | 080M46 | | 3C45 | 1660 | C45 | F1145 | | 38HM | | | |
| 1.1213 | S50C | CF53 | 1050 | 070M55 | | XC48HTS | 1674 | C53 | | G10500 | 50 | | | |
| 1.7242 | SCM418 H | 18CrMo4 | | | | | | | | | | | | |
| 1.7337 | | 16CrMo4-4 | A387 Gr.12 | | | | | A18CrMo45KW | | K11564 | 15C M | | | |
| 1.7362 | SCM6 | 12CrMo195 | | 3606-625 | | Z10CD5-05 | | 16CrMo205 | | K41545 | | | | |
| | | 17MnV6 | A572-60 | 436055E | | NFA35-501E36 | 2142 | | | | | | | |

Technical Information
Material Groups

Please visit global.yg1.com/mat for material search



| Mat'l No. | JIS | DIN | AISI/ASTM/SAE | Material Description | | | | | Composition / Structure / Heat Treatment | | | | | HB | HRC |
|-----------|----------|--------|-------------------|----------------------|-------|-------|------|-------------------------|--|--------|------|--------|-----|----|-----|
| | | | | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | Brands | | | |
| P | VDI 3323 | 4 | Non-alloyed steel | | | | | About 0.75% C, Annealed | | | | | 270 | 28 | |
| 1.0603 | S70C-CSP | C67 | 107 | 080A67 | | XC65 | | C67 | | G10700 | | | | | |
| 1.0605 | | C75 | 1075 | 144980HS | | | | C75 | | G10740 | | 75 | | | |
| 1.1203 | S55C | Ck55 | 1055 | 060A57 | | 2C55 | 1655 | C55 | F1150 | G10550 | | 55 | | | |
| 1.1209 | | C55R | 1055 | 070M55 | | 3C55 | | C55 | F1155 | G10550 | | | | | |
| 1.1221 | S58C | Ck60 | 1060 | 060A62 | 43D | 2C60 | 1678 | C60 | F1150 | G10640 | | 60 | | | |
| 1.1231 | S70C-CSP | C67E | 1070 | 060A67 | | XC68 | 1770 | C70 | F5103 | G10700 | | 65GA | | | |
| 1.1248 | C75 | C75E | 1074 | 060A78 | | XC75 | 1774 | C75 | F5107 | G10800 | | 75(A) | | | |
| 1.1269 | SK5-CSP | C85E | 1086 | | | XC90 | | C90 | | G10900 | | 85(A) | | | |
| 1.1274 | SUP4 | Ck101 | 1095 | 060A96 | C100S | XC100 | 1870 | C100 | F5117 | G10950 | | | | | |
| 1.1545 | SK3 | C105W1 | W1 | BW2 | C105U | Y1105 | 1880 | C100KU | F5118 | | | U10A | | | |
| 1.1663 | SK2 | C125W | W112 | | | Y2120 | | | | | | U13 | | | |

| Mat'l No. | JIS | DIN | AISI/ASTM/SAE | Material Description | | | | | Composition / Structure / Heat Treatment | | | | | HB | HRC |
|-----------|----------|----------|-------------------|----------------------|-------|-------|------|------------------------------------|--|--------|------|--------|-----|----|-----|
| | | | | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | Brands | | | |
| P | VDI 3323 | 5 | Non-alloyed steel | | | | | About 0.75% C, Quenched & Tempered | | | | | 300 | 32 | |
| 1.0070 | | St 70-2 | 1055 | Fe990-2FN | - | A70-2 | 1655 | Fe 690 | F1150 | | | 55 | | | |
| 1.0535 | S55C | C55 | 1055 | 070M55 | | 1C55 | 1655 | C55 | | J05000 | | 55 | | | |
| 1.0601 | S58C | C60 | 1060 | 060A62 | 43D | 1C60 | | C60 | | G10600 | | 60(G) | | | |
| 1.1203 | S55C | Ck55 | 1055 | 060A57 | | 2C55 | 1655 | C55 | F1150 | G10550 | | 55 | | | |
| 1.1221 | S58C | Ck60 | 1060 | 060A62 | 43D | 2C60 | 1678 | C60 | F1150 | G10640 | | 60 | | | |
| 1.1274 | SUP4 | Ck101 | 1095 | 060A96 | C100S | XC100 | 1870 | C100 | F5117 | G10950 | | | | | |
| 1.1545 | SK3 | C105W1 | W1 | BW2 | C105U | Y1105 | 1880 | C100KU | F5118 | | | U10A | | | |
| 1.1663 | SK2 | C125W | W112 | | | Y2120 | | | | | | U13 | | | |
| 1.5120 | | 38MnSi4 | | | | | | | | | | | | | |
| 1.5710 | SNC236 | 36NiCr6 | 3135 | 640A35 | 111A | 35NC6 | | | | | | | | | |
| 1.7701 | | 51CrMoV4 | | | | | | 51CrMoV4 | | | | | | | |

Technical Information
Material Groups

Please visit global.yg1.com/mat for material search



| Mat'l No. | JIS | DIN | AISI/ASTM/SAE | Material Description | | | | | Composition / Structure / Heat Treatment | | | | | HB | HRC |
|-----------|--------------|--------------|-------------------|----------------------|--------------|-------------|----|----------|--|---------------|---------|--------|----------|----|-----|
| | | | | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | Brands | | | |
| P | VDI 3323 | 6 | Low-alloyed Steel | | | | | Annealed | | | | | 180 | 10 | |
| 1.0116 | | St 37-3 | | A570 Gr. 36 | 4360-40C | S 235 J2 G3 | | E24-3 | 1312 | Fe 360 D1(2) | AE235D | | 5T3KP | | |
| 1.0904 | SKH 1, SKT 4 | 55Si7 | | 9255 | 250A53 | 45 | | 55S7 | 2085 | 55Si8 | 56Si7 | G92550 | 55S2 | | |
| 1.0961 | SUP 7 | 60SiCr7 | | 9262 | | | | 60SiCr6 | | 60SiCr8 | 60SiCr8 | G92620 | | | |
| 1.2067 | | 100Cr6 | | L3 | BL3 | | | Y100C6 | | | 100Cr6 | | | | |
| 1.2108 | | 90CrSi5 | | L1 | | | | | 2092 | 105WCr5 | | | | | |
| 1.2210 | | 115CrV3 | | L2 | | | | 100C3 | | 107CrV3KU | F520L | | 11KHf | | |
| 1.2241 | | 51CrV4 | | | | | | | | | | | | | |
| 1.2330 | SCM435TK | 35CrMo4 | | 4135 | 708A37 | | | 34CD4 | 2234 | 35CrMo4 | | | 35KHfM | | |
| 1.2419 | SKS31 | 105WC6 | | | 105WC13 | | | 105WC13 | 2140 | 10WCr6 | | | CWfG | | |
| 1.2510 | SKS3 | 100MnCrW4 | | O1 | BO1 | | | 90MnWC5 | 2140 | 95 MnWCr 5 KU | F5220 | | 9KHVG | | |
| 1.2542 | | 45WCrV7 | | S1 | BS1 | | | | 2710 | 45WCrV8KU | | | 5CW25F | | |
| 1.2550 | | 60WCrV7 | | S1 | | | | 55WC20 | 2710 | 58WCr9KU | | | 5KHV25F | | |
| 1.2713 | SKT4 | 55NiCrMoV6 | | L6 | | | | 55NCDV7 | | | F5205 | | 5C NM | | |
| 1.2721 | | 50NiCr13 | | L6 | | | | 55NiCrV6 | 2550 | | F528 | | | | |
| 1.2842 | | 90MnCrV8 | | O2 | BO2 | | | 90MnV8 | | | T31502 | | 9G2F | | |
| 1.3501 | | 100Cr2 | | E50100 | | | | | | | | | | | |
| 1.3505 | SUJ2 | 100Cr6 | | 52100 | 25135 | 31 | | 100C6 | 2258 | 100Cr6 | F1310 | | SC C 15 | | |
| 1.5024 | | 46Si7 | | | | | | 46Si7 | | | F1451 | | | | |
| 1.5025 | | 51Si7 | | 9259H | | 50Si7 | | 51Si7 | 2090 | 50Si7 | F1450 | | | | |
| 1.5026 | | 55Si7 | | | | 56Si7 | | 55Si7 | 2085 | 55Si7 | F1440 | G92550 | 55S2 | | |
| 1.5027 | | 60Si7 | | 9260 | 251A60 | 60Si7 | | 60Si7 | 6057 | 60Si7 | F1441 | G92600 | 60S2 | | |
| 1.5028 | SUP7 | 65Si7 | | 9260H | | | | | | | | | | | |
| 1.5415 | STFA 12 | 15Mo3 | | A204GrA | 1503-243B | | | 15D3 | 2912 | 16Mo3(KG) | F2601 | | K11820 | | |
| 1.5419 | SCPH11 | 20Mo4 | | 4419 | 1503-243-430 | | | | 2512 | G20Mo5 | | | G44190 | | |
| 1.5423 | SB450M | 16Mo5 | | 4520 | 1503-245-420 | | | | | 16Mo5(KG) | F2602 | | K11522 | | |
| 1.5622 | | 14Ni6 | | A350-LF5 | | | | 16N6 | | 14Ni6(KG) | F2641 | | | | |
| 1.5732 | SNC415(H) | 14NiCr10 | | 3415 | | | | 14NC11 | | 16NiCr11 | | | | | |
| 1.5752 | SNC815(H) | 14NiCr14 | | 3310 | 655M13 | 36A | | 12NC15 | | | | | 20X2H4A | | |
| 1.6511 | SUP10 | 36CrNiMo4 | | 9840 | 816M40 | 110 | | 40NCD3 | | 36NiCrMo4(KB) | | | 40C N2MA | | |
| 1.6523 | SNCM220(H) | 21NiCrMo2 | | 8620 | 805M20 | 362 | | 20NCD2 | 2506 | 20NiCrMo2 | | | 20C GNM | | |
| 1.6546 | SNCM240 | 40NiCrMo2-2 | | 8740 | 311-Fyre7 | | | | | 40NiCrMo2(KB) | | | 38C GNM | | |
| 1.6566 | | 17NiCrMo6-4 | | | | | | | | | | | | | |
| 1.6587 | | 17CrNiMo6 | | 820A16 | | | | 18NCD6 | | 14NiCrMo13 | | | | | |
| 1.6657 | | 10NiCrMo13-4 | | | | | | | | 14NiCrMo131 | | | | | |
| 1.7015 | SCr415(H) | 10Cr3 | | 5015 | 523M15 | | | 12C3 | | | | G50150 | 15C | | |
| 1.7033 | SCr430(H) | 34Cr4 | | 5132 | 530A32 | 188 | | 32C4 | | 34Cr4(KB) | | G51300 | 35C | | |
| 1.7035 | SCr440(H) | 41Cr4 | | 5140 | 530M40 | 18 | | 42C4 | 2245 | 41Cr4 | | G51400 | 40H | | |
| 1.7131 | SCR 415 | 16MnCr5 | | 5115 | 527M17 | | | 16MC5 | 2511 | 16MnCr5 | | G51150 | 12KHfN2 | | |
| 1.7139 | | 16MnCr55 | | | | | | | 2127 | | | | 18HG | | |
| 1.7176 | SUP9(A) | 55Cr3 | | 5155 | 527A60 | 48 | | 55C3 | 2253 | 55Cr3 | | | 50C GA | | |
| 1.7218 | SCM420 | 25CrMo4 | | 4130 | CDS110 | | | 25CD4 | 2225 | 25CrMo4(KB) | | | 20C M | | |
| 1.7220 | SCM432 | 34CrMo4 | | 4135 | 708 A 37 | | | 35CD4 | 2234 | 34CrMo4 | | | 35C M | | |
| 1.7223 | SNB22-1 | 41CrMo4 | | 4142 | | | | | | 41CrMo4 | | | 40C FA | | |
| 1.7225 | SCM 440 (H) | 42CrMo4 | | 4140 | 708 M 40 | 42 CrMo 4 | | 42 CD 4 | 2244 | 42 CrMo 4 | F1252 | | 38HM | | |
| 1.7228 | | 55NiCrMoV6G | | | 823M30 | | | | 2512 | 653M31 | | | | | |
| 1.7262 | SCM415(H) | 15CrMo5 | | | | | | 12CD4 | 2216 | 12CrMo4 | | | | | |
| 1.7321 | | 20mOcr4 | | | | | | | 2625 | | | | | | |
| 1.7335 | SCM415(H) | 13CrMo4-4 | | A182-F11 | 1501-620 | | | 15CD4-5 | 2216 | 14CrMo45 | | | 12C M | | |
| 1.7361 | | 32CrMo12 | | | 722M24 | 408 | | 30CD12 | 2240 | 30CrMo12 | F124A | | | | |
| 1.7380 | | 10CrMo9-10 | | A182F22 | 1501-622 | | | 12CD9-10 | 2218 | 12CrMo9 | | | 12KHfB | | |

Technical Information
Material Groups

Please visit global.yg1.com/mat for material search



| Mat'l No. | JIS | DIN | Material Description | | | | | Composition / Structure / Heat Treatment | | | | | HB | HRC | |
|-----------|----------|-------------|----------------------|--------------------------|-----|-----------|------|--|-----------------|----------|--------|---------|----|------------|-----------|
| | | | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | Brands | | | |
| | | P | VDI 3323 | Low-alloyed Steel | | | | | Annealed | | | | | 180 | 10 |
| 1.7715 | | 14MoV6-3 | | 1503-660-440 | | | | | | 13MoCrV6 | | | | | |
| 1.8159 | SUP 10 | 50CrV4 | 6150 | 735A50 | 47 | 50CrV4 | 2230 | 50CrV4 | | | G61500 | 50C GFA | | | |
| 1.8161 | | 58CrV4 | | | | | | | | | | | | | |
| 1.8509 | SACM 645 | 41CrAlMo7 | A355A | 905M39 | 41B | 40CAD6-12 | 2940 | 41CrAlMo7 | | | | | | | |
| 1.8523 | | 39CrMoV13-9 | | 897M39 | 40C | | | 36CrMoV12 | | | | | | | |

| Mat'l No. | JIS | DIN | Material Description | | | | | Composition / Structure / Heat Treatment | | | | | HB | HRC | |
|-----------|-----------|---------------|----------------------|--------------------------|-----|----------|------|--|--------------------------------|--------|-----------|--------|----|------------|-----------|
| | | | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | Brands | | | |
| | | P | VDI 3323 | Low-alloyed Steel | | | | | Quenched & Tempered | | | | | 275 | 29 |
| 1.5415 | STFA 12 | 15Mo3 | A204GrA | 1503-243B | | 15D3 | 2912 | 16Mo3(KG) | F2601 | K11820 | | | | | |
| 1.5423 | SB450M | 16Mo5 | 4520 | 1503-245-420 | | | | 16Mo5(KG) | F2602 | K11522 | | | | | |
| 1.5622 | | 14Ni6 | A350LF5 | | | 16N6 | | 14Ni6(KG) | F2641 | | | | | | |
| 1.5732 | SNC415(H) | 14NiCr10 | 3415 | | | 14NC11 | | 16NiCr11 | | | | | | | |
| 1.5752 | SNC815(H) | 14NiCr14 | 3310 | 655M13 | 36A | 12NC15 | | | | | 20X2H4A | | | | |
| 1.5755 | SNC236 | 31NiCr14 | | 653M31 | | 18NC13 | 2534 | | F1270 | | | | | | |
| 1.6565 | SNCM447 | 40NiCrMo6 | 4340 | 817M40 | 24 | 35NCD6 | 2541 | 35NiCrMo6(KB) | | | 38C 2N2MA | | | | |
| 1.6587 | | 17CrNiMo6 | | 820A16 | | 18NCD6 | | 14NiCrMo13 | | | | | | | |
| 1.6657 | | 10NiCrMo13-4 | | | | | | 14NiCrMo131 | | | | | | | |
| 1.6957 | | 26NiCrMoV14-5 | | | | | | | | | | | | | |
| 1.7015 | SCr415(H) | 10Cr3 | 5015 | 523M15 | | 12C3 | | | | G50150 | 15C | | | | |
| 1.7262 | SCM415(H) | 15CrMo5 | | | | 12CD4 | 2216 | 12CrMo4 | | | | | | | |
| 1.7335 | SCM415(H) | 13CrMo4-4 | A182-F11 | 1501-620 | | 15CD4-5 | 2216 | 14CrMo45 | | | 12C M | | | | |
| 1.7380 | | 10CrMo9-10 | A182F22 | 1501-622 | | 12CD9-10 | 2218 | 12CrMo9 | | | 12KH8 | | | | |
| 1.7715 | | 14MoV6-3 | | 1503-660-440 | | | | 13MoCrV6 | | | | | | | |
| 1.7733 | | 24CrMoV55 | | | | 20CDV6 | | 21CrMoV511 | | | | | | | |
| 1.7755 | | G545CrMoV10-4 | | | | | | | | | | | | | |
| 1.8070 | | 21CrMoV511 | | | | | | 35NiCr9 | | | | | | | |

| Mat'l No. | JIS | DIN | Material Description | | | | | Composition / Structure / Heat Treatment | | | | | HB | HRC | |
|-----------|-------------|-----------|----------------------|--------------------------|-----|--------|------|--|--------------------------------|--------|---------|--------|----|------------|-----------|
| | | | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | Brands | | | |
| | | P | VDI 3323 | Low-alloyed Steel | | | | | Quenched & tempered | | | | | 300 | 32 |
| 1.1730 | | C45W3 | C45W | | | XC48 | | | | | | | | | |
| 1.2332 | SCM(440) | 47CrMo4 | 4142 | 708M40 | 19A | 42CD4 | 2244 | 42CrMo4 | | | | | | | |
| 1.5736 | SNC 631 (H) | 35NiCr10 | 3435 | | | 30NC11 | | | | | | | | | |
| 1.6523 | SNCM220(H) | 21NiCrMo2 | 8620 | 805M20 | 362 | 20NCD2 | 2506 | 20NiCrMo2 | | | 20C GNM | | | | |
| 1.7033 | SCr430(H) | 34Cr4 | 5132 | 530A32 | 18B | 32C4 | | 34Cr4(KB) | | G51300 | 35C | | | | |
| 1.7218 | SCM420 | 25CrMo4 | 4130 | CDS110 | | 25CD4 | 2225 | 25CrMo4(KB) | | | 20C M | | | | |
| 1.8515 | | 32CrMo12 | | 722M24 | 40B | 30CD12 | 2240 | 32CrMo12 | F124A | | | | | | |

Technical Information
Material Groups

Please visit global.yg1.com/mat for material search



| Mat'l No. | JIS | DIN | Material Description | | | | | Composition / Structure / Heat Treatment | | | | | HB | HRC | |
|-----------|--------------|-----------------|----------------------|--------------------------|-----------|---------------|------|--|--------------------------------|----------|---------|--------|----|------------|-----------|
| | | | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | Brands | | | |
| | | P | VDI 3323 | Low-alloyed Steel | | | | | Quenched & Tempered | | | | | 350 | 38 |
| 1.0904 | SKH 1, SKT 4 | 55Si7 | 9255 | 250A53 | 45 | 55S7 | 2085 | 55Si8 | | G9250 | 55S2 | | | | |
| 1.0961 | SUP 7 | 60SiCr7 | 9262 | | | 60SC6 | | 60SiCr8 | | G92620 | | | | | |
| 1.2067 | | 100Cr6 | L3 | | | Y100C6 | | 100Cr6 | | | | | | | |
| 1.2419 | SKS31 | 105WCr6 | | 105WC13 | | 105WC13 | 2140 | 10WCr6 | | | CWG | | | | |
| 1.2542 | | 45WCrV7 | S1 | BS1 | | | | 2710 | 45WCrV8KU | | 5CW25F | | | | |
| 1.2713 | SKT4 | 55NiCrMoV6 | L6 | | | 55NCDV7 | | | F5205 | | 5C NM | | | | |
| 1.4882 | | X50CrMnNiNbN219 | | | | Z50CMNnb21-09 | | | | | | | | | |
| 1.5120 | | 38MnSi4 | | | | | | | | | | | | | |
| 1.5710 | SNC236 | 36NiCr6 | 3135 | 640A35 | 111A | 35NC6 | | | | | | | | | |
| 1.5755 | SNC236 | 31NiCr14 | | 830m31 | | 18NC13 | 2534 | | F.1270 | | | | | | |
| 1.6511 | SUP10 | 36CrNiMo4 | 9840 | 816M40 | 110 | 40NCD3 | | 36NiCrMo4(KB) | | 40C N2MA | | | | | |
| 1.6546 | SNCM240 | 40NiCrMo2-2 | 8740 | 311-Tyre7 | | 40NiCrMo2(KB) | | | | 38C GNM | | | | | |
| 1.7035 | SCr440(H) | 41Cr4 | 5140 | 530M40 | 18 | 42C4 | 2245 | 41Cr4 | | G51400 | 40H | | | | |
| 1.7176 | SUP9(A) | 55Cr3 | 5155 | 527A60 | 48 | 55C3 | 2253 | 55Cr3 | | | 50C GA | | | | |
| 1.7220 | SCM432 | 34CrMo4 | 4135 | 708Aa37 | | 35CD4 | 2234 | 34CrMo4 | | | 35C M | | | | |
| 1.7223 | SNB22-H | 41CrMo4 | 4142 | | | | | 41CrMo4 | | | 40C FA | | | | |
| 1.7225 | SCM 440 (H) | 42CrMo4 | 4140 | 708 M 40 | 42 CrMo 4 | 42 CD 4 | 2244 | 42 CrMo 4 | F.1252 | | 38HM | | | | |
| 1.7361 | | 32CrMo12 | | 722M24 | 40B | 30CD12 | 2240 | 30CrMo12 | F.124A | | | | | | |
| 1.8159 | SUP 10 | 50CrV4 | 6150 | 735A50 | 47 | 50CrV4 | 2230 | 50CrV4 | 51CrV4 | G61500 | 50C GFA | | | | |
| 1.8161 | | 58CrV4 | | | | | | | | | | | | | |
| 1.8509 | SACM 645 | 41CrAlMo7 | A355A | 905M39 | 41B | 40CAD6-12 | 2940 | 41CrAlMo7 | | | | | | | |
| 1.8523 | | 39CrMoV13-9 | | 897M39 | 40C | | | 36CrMoV12 | | | | | | | |

| Mat'l No. | JIS | DIN | Material Description | | | | | Composition / Structure / Heat Treatment | | | | | HB | HRC | |
|-----------|-----------|--------------|----------------------|---|----------|-----------|------|--|-----------------|--------|----------|-----------|----|------------|-----------|
| | | | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | Brands | | | |
| | | P | VDI 3323 | High-alloyed steel, and tool steel | | | | | Annealed | | | | | 200 | 15 |
| 1.0347 | SPCD | RRS1.3 | A619 | CR 3 | Fe P03 | F 13 | | DC03/FeP03 | | | O8JU | | | | |
| 1.0723 | SUM32 | 15S22 | | 210A15 | | | 1922 | | F210F | | | | | | |
| 1.2080 | SKD1 | X210Cr12 | D3 | BD3 | X210Cr12 | Z200C12 | | X205Cr12KU | | T30403 | KH12 | | | | |
| 1.2162 | SCR 420 H | 21MnCr5 | | | | 20MCS | | | | | | | | | |
| 1.2311 | | 40CrMnMo7 | | | | 40CMD8 | | 35CrMnO8KU | | | | | | | |
| 1.2312 | | 40CrMnMoS8.6 | P20+S | | | 40CMD8S | | | | | | | | | |
| 1.2316 | | X36CrMo17 | | | | | | X38CrMo16 | | | | | | | |
| 1.2343 | SKD 6 | X38CrMoV5-1 | H11 | BH11 | | Z38CDV5 | | X37CrMoV51KU | | T20811 | 4C 5MFS | | | | |
| 1.2344 | SKD61 | X40CrMoV5-1 | H13 | BH13 | | Z40CDV5 | 2242 | X40CrMoV511KU | F.5318 | T20813 | 4C 5MF15 | | | | |
| 1.2363 | SKD12 | X100CrMoV5-1 | A2 | BA2 | | Z100CDV5 | 2260 | X100CrMoV51KU | F.5227 | | 9KH5VF | | | | |
| 1.2379 | SKD11 | X155CrWMo121 | D2 | BD2 | | Z160CDV12 | 2310 | X165CrWMo12KU | | T30402 | KH12MF | KRUPP2379 | | | |
| 1.2436 | SKD 2 | X210CrW12 | D4(D6) | BD6 | | Z200CD12 | 2312 | X215CrW121KU | F.5213 | | KH12 | | | | |

NEXT PAGE ►

Technical Information
Material Groups

Please visit global.yg1.com/mat for material search



| Mat'l No. | JIS | DIN | Material Description | | | Composition / Structure / Heat Treatment | | | | | HB | HRC |
|-----------|-------------|-------------|----------------------|---------|----|--|------|--------------|-------|--------|----------|-----|
| | | | AISI/ASTM/SAE | BS | EN | Annealed | | | | | | |
| 1.2510 | SKS3 | 100MnCrW4 | O1 | B01 | | 90MnWCV5 | 2140 | 95MnWCr5KU | F5220 | | 9HVG | |
| 1.2581 | SKD5 | X30WCrV9-3 | H21 | BH21 | | Z30WCV9 | | X30WCrV93KU | F526 | T20821 | 3C 2WB8F | |
| 1.2601 | | X165CrMoV12 | | | | | 2310 | X160CrMoV12 | | | KH12MF | |
| 1.2606 | SKD 62 | X37CrMoW51 | H12 | BH12 | | Z35CWDV5 | | X35CrMoW05KU | F537 | T20812 | 5C NM | |
| 1.2764 | | X19NiCrMo4 | | | | | | | | | | |
| 1.2767 | | X45NiCrMo4 | | | | 45NCD16 | | 40NiCrMoV8KU | | | | |
| 1.2842 | | 90MnCrV8 | O2 | B02 | | 90MVB | | 90MnVCr8KU | | T31502 | 9G2F | |
| 1.3243 | SKH55 | S6-5-2-5 | T15 | | | KCV06-05-05-04-02 | 2723 | H56-5-2-5 | | | R6M5K5 | |
| 1.3249 | SKH 3 | S18-1-2-5 | T4 | BT4 | | Z80WKC18-05-04 | | | | | R18KSF2 | |
| 1.3343 | SKH51, SKH9 | S6-5-2 | M2 | BM2 | | Z85WDCV | 2722 | H5652 | F5604 | | R6M5 | |
| 1.3348 | SKH 58 | S2-9-2 | M7 | | | Z100DCW09-04-02 | 2782 | H5292 | F5607 | | | |
| 1.3355 | SKH 2 | S18-0-1 | T1 | BT1 | | Z80WCV18-4-01 | | | | | R18 | |
| 1.4718 | SUH1 | X45CrSi9-3 | HNV3 | 401545 | 52 | Z45CS9 | | X45CrSi8 | F322 | | 40C 952 | |
| 1.5662 | SL9N60(S3) | X8Ni9 | ASMA353 | 502-650 | | 9Ni | | X10Ni9 | F2645 | | | |
| 1.5680 | | 12Ni19 | 2515 | 12Ni19 | | Z18N5 | | | | | | |

| Mat'l No. | JIS | DIN | Material Description | | | Composition / Structure / Heat Treatment | | | | | HB | HRC |
|-----------|-------------|--------------|----------------------|--------|----------|--|------|---------------|-------|--------|----------|-----|
| | | | AISI/ASTM/SAE | BS | EN | Quenched & Tempered | | | | | | |
| 1.2080 | SKD1 | X210Cr12 | D3 | BD3 | X210Cr12 | Z200C12 | | X205Cr12KU | | T30403 | KH12 | |
| 1.2344 | SKD61 | X40CrMoV5-1 | H13 | BH13 | | Z40CDV5 | 2242 | X40CrMoV511KU | F5318 | T20813 | 4C 5MF15 | |
| 1.2363 | SKD12 | X100CrMoV5-1 | A2 | BA2 | | Z100CDV5 | 2260 | X100CrMoV51KU | F5227 | | 9KH5VF | |
| 1.2496 | SKD 2 | X210CrW12 | D4(D6) | BD6 | | Z200CD12 | 2312 | X215CrW121KU | F5213 | | KH12 | |
| 1.2581 | SKD5 | X30WCrV9-3 | H21 | BH21 | | Z30WCV9 | | X30WCrV93KU | F526 | T20821 | 3C 2WB8F | |
| 1.2601 | | X165CrMoV12 | | | | | 2310 | X160CrMoV12 | | | KH12MF | |
| 1.2714 | SKT 4 | S5NiCrMoV7 | 6F3/L6 | | | S5NiCrMoV7 | | | F5205 | | 5KHNV | |
| 1.3202 | | S12-1-4-5 | | BT15 | | | | H512-1-5-5 | | | | |
| 1.3207 | | S10-4-3-10 | | BT42 | | Z130WKCDV | | | | | | |
| 1.3243 | SKH55 | S6-5-2-5 | T15 | | | KCV06-05-05-04-02 | 2723 | H56-5-2-5 | | | R6M5K5 | |
| 1.3246 | | S7-4-2-5 | M35 | | | Z110WKCDV07-05-04 | | H57-4-2-5 | | | R2AM9K5 | |
| 1.3247 | SKH 51 | S2-10-1-8 | M42 | BM42 | | Z110DKCW09-08-04 | | H52-9-1-8 | | | | |
| 1.3255 | SKH 3 | S18-1-2-5 | T4 | BT4 | | Z80WKC18-05-04 | | | | | R18KSF2 | |
| 1.3343 | SKH51, SKH9 | S6-5-2 | M2 | BM2 | | Z85WDCV | 2722 | H5652 | F5604 | | R6M5 | |
| 1.3348 | SKH 58 | S2-9-2 | M7 | | | Z100DCW09-04-02 | 2782 | H5292 | F5607 | | | |
| 1.3355 | SKH 2 | S18-0-1 | T1 | BT1 | | Z80WCV18-4-01 | | | | | R18 | |
| 1.4718 | SUH1 | X45CrSi9-3 | HNV3 | 401545 | 52 | Z45CS9 | | X45CrSi8 | F322 | | 40C 952 | |
| 1.4935 | SUH 616 | X20CrMoW121 | 422 | | | | | | | 542200 | | |
| 1.5680 | | 12Ni19 | 2515 | 12Ni19 | | Z18N5 | | | | | | |

Technical Information
Material Groups

Please visit global.yg1.com/mat for material search



| Mat'l No. | JIS | DIN | Material Description | | | Composition / Structure / Heat Treatment | | | | | HB | HRC |
|-----------|-------------|----------------|----------------------|--------|--------|--|------|---------------|-------|--------|-------------|----------|
| | | | AISI/ASTM/SAE | BS | EN | Stainless steel | | | | | | |
| 1.4000 | SUS403 | X6Cr13 | 403 | 403S17 | | Z6Cr13 | 2301 | X6Cr13 | F3110 | S40300 | 08C 13 | ATI4105 |
| 1.4001 | | X7Cr14 | 410 S | 40357 | | Z8Cr13 | 2301 | | F8401 | | 08C 13 | |
| 1.4002 | SUS 405 | X6CrAl13 | 405 | 405517 | | Z6CrAl13 | 2302 | X6CrAl13 | | S40500 | | |
| 1.4005 | SUS416 | X12CrS13 | 416 | 416521 | | Z11Cr13 | 2380 | X12CrS13 | F3411 | S41600 | | ATI416 |
| 1.4006 | SUS410 | X12Cr13 | 410 | 410521 | 56A | Z10Cr13 | 2302 | X12Cr13 | F3401 | S41000 | 12C 13 | ATI410 |
| 1.4016 | SUS430 | X6Cr17 | 430 | 430515 | X8Cr17 | Z8Cr17 | 2320 | X8Cr17 | F3113 | S43000 | 12C 17 | ATI430 |
| 1.4027 | SCS 2 | GX20Cr14 | | 420C29 | | Z20Cr13M | | | | | 20C 13L | |
| 1.4028 | SUS420J2 | X30Cr13 | 420 | 420545 | | Z30Cr13 | 2304 | | | S42020 | 20C 13 | |
| 1.4034 | SUS420J2 | X46Cr13 | | 420545 | | Z40Cr14 | | X40Cr14 | F3405 | | | |
| 1.4057 | SUS431 | X19CrNi17-2 | 431 | 431529 | 57 | Z15CrNi16-02 | 2321 | X16CrNi16 | F3427 | S43100 | 20C 17N2 | 431 (HT) |
| 1.4086 | | GX120Cr29 | | 452C11 | | | | | | | | |
| 1.4104 | SUS430F | X12CrMoS17 | 430F | 420537 | | Z10CrF17 | 2383 | X10CrS17 | F3117 | S43020 | | |
| 1.4112 | SUS 440 B | X90CrMoV18 | 440B | | | | | | | S44003 | 95KH18 | |
| 1.4113 | SUS434 | X6CrMo17 | 434 | 434517 | | Z8CrD17-01 | 2325 | X8CrMo17 | | S43400 | | AL 434 |
| 1.4313 | SC55 | X3CrNi13-4 | CA6-NM | 425C11 | | Z4CrNi13-04M | 2385 | (GX)6CrNi304 | | J91540 | | |
| 1.4340 | | GX40CrNi274 | | | | | | | | J92615 | | |
| 1.4417 | | X2CrNiMoSi195 | S31500 | | | | | | | S39215 | | |
| 1.4418 | | X4CrNiMo165 | | | | Z6CrNi16-04-01 | 2387 | | | | | APX4 |
| 1.4510 | SUS430LX | X6CrTi17 | XM8 | | | Z4CrTi17 | | X6CrTi17 | F3115 | S43035 | 08C 17T | 430Ti |
| 1.4511 | SUS430LK | X6CrNb17 | | | | Z4CrNb17 | | X6CrNb17 | F3122 | | | AXCS25 |
| 1.4512 | SUH409 | X6CrTi12 | 409 | LW19 | | Z3CrTi12 | | X6CrTi12 | | S40900 | | |
| 1.4720 | | X20CrMo13 | | | | | | | | | | |
| 1.4724 | SUS 405 | X10CrAl113 | 405 | 403517 | | Z10Cr13 | | X10CrAl12 | F311 | | 10C 13S1U | |
| 1.4742 | SUS430 | X10CrAl118 | 430 | 439515 | 60 | Z10CrAl18 | | X8Cr17 | F3113 | S43000 | 15C 13S1U | |
| 1.4747 | SUH4 | X80CrNiSi20 | HNv6 | 443565 | 59 | Z80CrNi20-02 | | X80CrNi20 | F3208 | S65006 | | |
| 1.4749 | | X18CrN28 | 446 | | | | | | | | 15KH28 | |
| 1.4762 | SUH446 | X10CrAl124 | 446 | | | Z10CrAl24 | 2322 | X16Cr216 | | S44600 | | |
| 1.4871 | SUH35,SUH36 | X53CrMnNiN21-9 | EV8 | 349554 | | Z52CrMn21-09 | | X53CrMnNiN219 | | S63008 | 55C 20G9AN4 | |
| | | X10CrNi15 | 429 | | | | | | | | | |
| | | X12CrNi18-9 | 302 | 302531 | | Z10CrNi18-9 | 2330 | | | | | |

| Mat'l No. | JIS | DIN | Material Description | | | Composition / Structure / Heat Treatment | | | | | HB | HRC |
|-----------|-------------|----------------|----------------------|--------|--------|--|-------|---------------|-------|--------|-------------|-------------|
| | | | AISI/ASTM/SAE | BS | EN | Stainless steel | | | | | | |
| 1.4000 | SUS403 | X6Cr13 | 403 | 403S17 | | Z6Cr13 | 2301 | X6Cr13 | F3110 | S40300 | 08C 13 | ATI4105 |
| 1.4001 | | X7Cr14 | 410 S | 40357 | | Z8Cr13 | 2301 | | F8401 | | 08C 13 | |
| 1.4006 | SUS410 | X12Cr13 | 410 | 410521 | 56A | Z10Cr13 | 2302 | X12Cr13 | F3401 | S41000 | 12C 13 | ATI410 |
| 1.4016 | SUS430 | X6Cr17 | 430 | 430515 | X8Cr17 | Z8Cr17 | 2320 | X8Cr17 | F3113 | S43000 | 12C 17 | ATI430 |
| 1.4021 | SUS 420J1 | X20Cr13 | 420 | 420537 | | Z20Cr13 | 2303 | 14210 | F5261 | S42000 | 20C 13 | ATI420 |
| 1.4027 | SCS 2 | GX20Cr14 | | 420C29 | | Z20Cr13M | | | | | 20C 13L | |
| 1.4031 | SUS 420 J2 | X40Cr13 | 420 | | | Z40Cr14 | -2304 | | F3404 | S42080 | 40C 13 | |
| 1.4034 | SUS420J2 | X46Cr13 | | 420545 | | Z40Cr14 | | X40Cr14 | F3405 | | | |
| 1.4057 | SUS431 | X19CrNi17-2 | 431 | 431529 | 57 | Z15CrNi16-02 | 2321 | X16CrNi16 | F3427 | S43100 | 20C 17N2 | 431 (HT) |
| 1.4104 | SUS430F | X12CrMoS17 | 430F | 420537 | | Z10CrF17 | 2383 | X10CrS17 | F3117 | S43020 | | |
| 1.4113 | SUS434 | X6CrMo17 | 434 | 434517 | | Z8CrD17-01 | 2325 | X8CrMo17 | | S43400 | | AL 434 |
| 1.4313 | SC55 | X3CrNi13-4 | CA6-NM | 425C11 | | Z4CrNi13-04M | 2385 | (GX)6CrNi304 | | J91540 | | |
| 1.4544 | | A 700 | 321 | 5524 | | Z 10 CNT 18 11 | | X6CrNiTi1811 | | J92630 | 08C 18N12T | |
| 1.4546 | | X5CrNiNb18-10 | 348 | 347531 | | | | X6CrNiNb1811 | | J92640 | | ATI348 |
| 1.4871 | SUH35,SUH36 | X53CrMnNiN21-9 | EV8 | 349554 | | Z52CrMn21-09 | | X53CrMnNiN219 | | S63008 | 55C 20G9AN4 | |
| 1.4922 | | X20CrMoV12-1 | | | | | 2317 | x20CrMoV1201 | | | | |
| 1.4923 | | X22CrMoV121 | | | | | | | | | | Jethete X20 |

Technical Information
Material Groups

Please visit globalyg1.com/mat for material search



| Mat'l No. | JIS | DIN | Material Description | | | | | Composition / Structure / Heat Treatment | | | | | HB | HRC |
|-----------|-----------|------------------------|-----------------------------|---------|--------------|------------------|------|---|-----------|-------------|--------------|---------------|--------|-----|
| | | | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | Brands | | |
| | | | Material Description | | | | | Composition / Structure / Heat Treatment | | | | | | |
| | | | Stainless steel | | | | | Austenitic | | | | | 180 10 | |
| | | | VDI 3323 14 | | | | | | | | | | | |
| 1.4301 | SUS 304 | X5CrNi18-10 | 304 | 304S15 | | Z5CrNi18-09 | 2332 | | F3551 | S30409 | 08C 18N10 | | | |
| 1.4305 | SUS303 | X10CrNiS18-10 | 303 | 303S21 | 58M | Z8CrNi18-09 | 2346 | X10CrNiS18-09 | F3508 | S30300 | 30C 18N11 | ATI303 | | |
| 1.4306 | SCS19 | X2CrNi1911 | 304L | 304C12 | X3CrNi1810KD | Z2CrNi18-09 | 2352 | GX2CrNi1910 | F3503 | S30403 | 03KH18N11 | ATI 304L | | |
| 1.4308 | SUS304L | X6CrNi18-9 | CF-8 | 304C15 | 58E | Z6CrNi18-10M | 2333 | | | | | CF-8 | | |
| 1.4310 | SUS 301 | X10CrNi18-8 | 301 | 301S21 | | Z12CrNi17-07 | 2331 | X2CrNi1807 | F3517 | S30100 | 07KH16N6 | ATI301 | | |
| 1.4311 | SUS304LN | X2CrNi18 10 | 304LN | 304S62 | | Z2CrNi18-10 | 2371 | X2CrNi1810 | F3541 | S30453 | 03KH18N11 | | | |
| 1.4312 | SCS12 | GX10CrNi188 | 305 | 302C25 | | Z10CrNi18-9M | | | | | 10C 18N9L | ATI 305 | | |
| 1.4350 | SUS304 | X5CrNi18-9 | 304 | 304S15 | 58E | Z6CrNi18-09 | 2332 | X5CrNi1810 | F3551 | S30400 | | ATI 304 | | |
| 1.4362 | | X2CrNiN234 | S32304 | | | Z2CrNi23-04AZ | 2327 | | | S32304 | | ATI 2304TM | | |
| 1.4371 | | X3CrMnNi18887 | 202 | 284S16 | | Z8CrMn18-08-05 | | | | | | | | |
| 1.4401 | SUS316 | X5CrNiMo17-12-2 | 316 | 316S13 | | Z3CrNi17-1-01 | 2347 | X5CrNiMo17 12 2 | F3534 | S31600 | 08KH17H13M2T | ATI 316 | | |
| 1.4404 | SUS316L | X2CrNiMo17-13-2 | 316L | 316S11 | | Z2CrNi17-1-2 | 2348 | X2CrNiMo1712 | F3533 | S31603 | | ATI316L | | |
| 1.4406 | SUS316LN | X2CrNiMo17122 | 316LN | 316S61 | | Z2CrNi17-12AZ | | X2CrNiMo1712 | F3542 | S31653 | 07C 18N | ATI316LN | | |
| 1.4408 | SCS14 | GX6CrNiMo18-10 | CF-8M | 316C16 | | | 2343 | X7CrNiMo2010 | F6414 | J92900 | 10G2S2MSL | | | |
| 1.4410 | SCS 14 A | GX10CrNiMo18-9 | | | | Z5CrNi20-12M | 2328 | | | S32750 | | | | |
| 1.4429 | SUS316LN | X2CrNiMo17-13-3 | 316LN | 316S62 | | Z2CrNi17-13AZ | 2375 | X2CrNiMo17133 | F3543 | | 03KH16N15M3 | | | |
| 1.4435 | SUS316L | X2CrNiMo18143 | 316L | 316S11 | | Z3CrNi17-12-03 | 2375 | X2CrNiMo17 13 2 | F3533 | S31603 | 03C 17N14M3 | | | |
| 1.4436 | SUS316 | X3CrNiMo17-13-3 | 316 | 316S19 | | Z6CrNi18-12-03 | 2343 | X5CrNiMo17 12 2 | F3543 | S31600 | | | | |
| 1.4438 | SUS317L | X2CrNiMo18164 | 317L | 317S12 | | Z2CrNi19-15-04 | 2367 | X2CrNiMo18 16 4 | F3539 | S31703 | | ATI317L | | |
| 1.4439 | | X2CrNiMo17135 (s31726) | | | | Z3CrNi18-14-06AZ | | | | | | | | |
| 1.4440 | | X2CrNiMo18-16 | | | | | | | | | | | | |
| 1.4449 | SUS317 | X5CrNiMo17133 | 317 | 317S16 | | | | X5CrNiMo1815 | | S31700 | | ATI317 | | |
| 1.4460 | SUS329J1 | X8CrNiMo275 | 329 | | | | 2324 | | | S32900 | | 10RE51 | | |
| 1.4462 | SUS329J3L | X2CrNiMoN2253 | | 318S13 | | Z3CrNi22-05A2 | 2377 | | | S31803 | | ATI2205TM | | |
| 1.4500 | | X7NiCrMoCuNb2520 | | | | Z3CrNiCu25-20M | | | | J95150 | | | | |
| 1.4521 | SUS444 | X2CrNiTi18-2 | 443444 | | | | 2326 | X2CrNiTi18 2 | F3123 | | | | | |
| 1.4539 | | X1NiCrMoCuN25205 | | | | Z2CrNiCu25-20 | 2562 | | | N08904 | | ATI904L | | |
| 1.4541 | SUS321 | X14CrNiTi18-10 | 321 | 321S31 | | Z6CrNiTi18-10 | 2337 | X6CrNiTi18 11 | F3523 | S32100 | 06C 18N10T | ATI321 | | |
| 1.4542 | SUS630 | X5CrNiCuNb174 | 630 | | | Z7CrNi15-05 | | | | | | UGIMA 4542 | | |
| 1.4545 | | Z7CrNi15.05 | 15-5PH | | | | | | | S15500 | | ATI15-5 | | |
| 1.4547 | | X1CrNiMoN20187 | S31254 | | | | 2378 | | | S31254 | | Uranus B256Mo | | |
| 1.4550 | SUS347 | X6CrNiNb18-10 | 347 | 347S17 | 58F | Z6CrNiNb18-10 | 2338 | X6CrNiNb18 11 | F3552 | S34700 | 08C 18N12B | ATI347 | | |
| 1.4552 | SCS 21 | GX7CrNiNb18-9 | | | | Z4CrNiNb19-10M | | | | J92710 | | | | |
| 1.4568 | SUS631 | X7CrNiAl17 | | 316S111 | | Z9 CAN 17-7 | 2388 | Z8CrNiAl17-07 | | S17700 | 09C 17N1U1 | 17-7PH | | |
| 1.4571 | SUS 316Ti | X6CrNiMoTi17-12-2 | 316Ti | 320S31 | 58J | Z6NDTi17-12 | 2350 | X6CrNiMoTi17 12 | F3535 | | 10C 17N13M2T | ATI 316Ti | | |
| 1.4581 | SCS 22 | GX5CrNiMoNb18 | | 318C17 | | Z4CrNiNb18-12M | | | | | | | | |
| 1.4583 | | X6CrNiMoNb18-12 | 318 | 303S21 | | Z15CrNiS20-12 | | X15CrNiS12 | | | | | | |
| 1.4585 | | GX7CrNiMoCuNb1818 | | | | | | X6CrNiMoTi17 12 | | J94651 | | | | |
| 1.4821 | | X20CrNiSi254 | | | | Z20CrNiSi25-04 | | | | S44635 | | | | |
| 1.4823 | | GX40CrNiSi274 | | | | | | | | J92605 | | | | |
| 1.4828 | SCS17 | X15CrNiSi20-12 | 309 | 309S24 | 58C | Z15CrNiSi20-12 | | F8414 | S30900 | 20C 20N14S2 | | ATI309 | | |
| 1.4833 | SUS 309S | X6CrNi2213 | 309S | 309S13 | | Z15CrNi24-13 | | | | J93400 | | | | |
| 1.4845 | SLH410 | X12CrNi25-21 | 310S | 310S24 | | Z12CrNi25-20 | 2361 | X6CrNi2520 | F331 | S31008 | 20C 23N18 | ATI310S | | |
| 1.4878 | SUS321 | X12CrNiTi18-9 | 321 | 321S20 | 58B | Z6CrNiTi18-12(B) | 2337 | X6CrNiTi1811 | F3553 | S32100 | | ACX315 | | |
| 1.4891 | | X5CrNiNb18-10 | S30415 | | | | 2372 | | | | | | | |
| 1.4893 | | X8CrNiNb11 | S30815 | | | | 2368 | | | | | | | |
| 1.4948 | | X6CrNi1811 | 304H | 304S51 | | Z5CrNi18-09 | 2333 | | | S30480 | | | | |
| 1.4980 | | X5NiCrTi2515 | 660 | | | | 2570 | | | S66286 | | Incoloy A 286 | | |
| | | X5NiCrNi3525 | | | | | | | | | | | | |
| | | X2CrNiMoN18134 | S31753 | | | | | | | | | | | |
| | | X2CrNiMoN25227 | | | | | | | | | | | | |

Technical Information
Material Groups

Please visit globalyg1.com/mat for material search



| Mat'l No. | JIS | DIN | Material Description | | | | | Composition / Structure / Heat Treatment | | | | | HB | HRC |
|-----------|--------------|---------------|-----------------------------|------------|-----------------|--------------|---------|---|-----------|--------|--------|----------|---------------|-----|
| | | | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | Brands | | |
| | | | Material Description | | | | | Composition / Structure / Heat Treatment | | | | | | |
| | | | Grey cast iron | | | | | Pearlitic / Ferritic | | | | | 180 10 | |
| | | | VDI 3323 15 | | | | | | | | | | | |
| 0.6010 | FC100 | GG10 | A48 20 B | Grade 100 | GJL-100 | Ft 10 D | 0100 | G10 | FG10 | | | Sc 10 | | |
| 0.6015 | FC150 | GG15 | A48 25 B | Grade 150 | GJL-150 | Ft 15 D | 0115 | G15 | FG15 | | | Sc 15 | | |
| 0.6020 | FC200 | GG20 | A48 30 B | Grade 200 | GJL-200 | Ft 20 D | 0120 | G20 | FG20 | W06020 | | Sc 20 | | |
| 0.6025 | FC250 | GG25 | A48 40 B | Grade 260 | GJL-250 | Ft 25 D | 0125 | G25 | FG25 | | | Sc 25 | | |
| 0.6660 | | GG-L-NiCr 202 | 10650/700/7 | Grade F2 | GJLA-XNiCr 20-2 | L-NC 202 | 0523 | - | | | F41002 | | N-Resist 2 | |
| 1.4449 | SUS317 | X5CrNiMo17133 | 317 | 317S16 | | | | X5CrNiMo1815 | | S31700 | | ATI 317 | | |
| | | | VDI 3323 16 | | | | | | | | | | | |
| | | | Grey cast iron | | | | | Pearlitic (Martensitic) | | | | | 260 26 | |
| 0.6025 | FC250 | GG25 | A48 40 B | Grade 260 | GJL-250 | Ft 25 D | 0125 | G25 | FG25 | | | Sc 25 | | |
| 0.6030 | FC300 | GG30 | A48 45 B | Grade 300 | GJL-300 | Ft 30 D | 0130 | G30 | FG30 | | | Sc 30 | | |
| 0.6035 | FC350 | GG35 | A48 50 B | Grade 350 | GJL-350 | Ft 35 D | 0135 | G35 | FG35 | | | Sc 35 | | |
| 0.6040 | FC400 | GG40 | A48 60 B | Grade 400 | GJL-400 | Ft 40 D | 0140 | G40 | FC40 | | | Sc 40 | | |
| | | | VDI 3323 17 | | | | | | | | | | | |
| | | | Nodular cast iron | | | | | Ferritic | | | | | 160 3 | |
| 0.7033 | FCD350-22L | GGG35.3 | - | 350/22L-40 | GJS-350-22LT | FGS 370-17 | 0717-15 | - | | | | | | |
| 0.7040 | FCD400 | GGG40 | 60-40-18 | SNG 420-12 | GJS-400-15 | FCS 400-12 | 0717-02 | GS 400-12 | FG E38-17 | F32800 | | Vc 42-12 | | |
| 0.7048 | FCD 370 | GGG40.3 | 60-40-18 | SNG 370-17 | GJS-400-18LT | FGS 370-17 | 0717-12 | GSO 42-17 | | | | Vc 42-12 | | |
| 0.6040 | FC400 | GG40 | A48 60 B | Grade 400 | GJL-400 | Ft 40 D | 0140 | G40 | FC40 | | | Sc 40 | | |
| | | | VDI 3323 18 | | | | | | | | | | | |
| | | | Nodular cast iron | | | | | Pearlitic | | | | | 250 25 | |
| 0.7050 | FCD500 | GGG50 | 80-55-06 | SNG 500-7 | GJS-500-7 | FGS 500-7 | 0727-02 | GS 500-7 | FG E50-7 | F33100 | | Vc 50-2 | | |
| 0.7060 | FCD600 | GGG60 | 80-55-06 | SNG 600-3 | GJS-600-3 | FGS 600-3 | 0732-03 | GS 600-3 | FG E60-2 | | | Vc 60-2 | | |
| 0.7070 | FCD700 | GGG70 | 100-70-03 | SNG 700-2 | GJS-700-2 | FGS 700-2 | 0737-01 | GS 700-2 | FG S70-2 | F34800 | | Vc 70-2 | | |
| 0.7652 | FCDANiMn 137 | GGG NiMn 13-7 | - | Grade S6 | GJSA-XNiMn 13-7 | FGS Ni13 Mn7 | 0772 | - | | | | | Nodumag | |
| 0.7660 | | GGG NiCr 20-2 | A436 D2 | Grade S2 | GJSA-XNiCr 20-2 | FGS Ni20 Cr2 | 0776 | - | | | | | Ni-Resist D-2 | |

Technical Information
Material Groups

Please visit global.yg1.com/mat for material search



| K | VDI 3323 19 | | Material Description Malleable cast iron | | | | Composition / Structure / Heat Treatment Ferritic | | | | HB 130 | HRC |
|----------|-----------------------|--------|---|---------------|------------|----------|--|--------|-------|-----------|-----------|------|
| | Mat'l No. | JIS | DIN | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST |
| 0.8135 | FCM330 | GTS-35 | 32510 | B 340-12 | GJMB350-10 | MN 35-10 | 0815 | GMN 35 | GTS35 | | Kc 35-10 | |

| K | VDI 3323 20 | | Material Description Malleable cast iron | | | | Composition / Structure / Heat Treatment Pearlitic | | | | HB 230 | HRC 21 |
|----------|-----------------------|--------|---|---------------|-----------|----------|---|--------|-----|-----------|-----------|-----------|
| | Mat'l No. | JIS | DIN | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST |
| 0.8145 | FCM370 | GTS-45 | A220-10010 | P 440-7 | GJMB450-6 | MN 450 | 0852 | GMN 45 | | | | |
| 0.8155 | FCM390 | GTS-55 | 50005 | P 510-4 | GJMB550-4 | MP 50-5 | 0854 | GMN 55 | | | | Kc 60-3 |
| 0.8165 | FCM390 | GTS-65 | 70003 | P 570-3 | GJMB650-2 | MN 650-3 | 0856 | GMN 65 | | | | |
| 0.8170 | FCM390 | GTS-70 | 90001 | P 690-2 | GJMB700-2 | MN 700-2 | 0862 | GMN 70 | | | | Kc 70-2 |

Technical Information
Material Groups

Please visit global.yg1.com/mat for material search



| N | VDI 3323 21 | | Material Description Aluminum-wrought alloy | | | | Composition / Structure / Heat Treatment Not Curable | | | | HB 60 | HRC | |
|----------|-----------------------|-----|--|---------------|-----|----|---|----|-----|-----------|----------|------|--------|
| | Mat'l No. | JIS | DIN | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | Brands |
| 3.0205 | | | Al99 | Al99 | | | | | | | | | |
| 3.0255 | (A1050) | | Al99.5 | 1000 | L31 | | A59050C | | | | | D1 | |
| 3.3315 | | | AlMg1 | | | | | | | | | | |

| N | VDI 3323 22 | | Material Description Aluminum-wrought alloy | | | | Composition / Structure / Heat Treatment Curable, Hardened | | | | HB 100 | HRC | |
|----------|-----------------------|-----|--|---------------|------|----|---|----|---------------|-----------|-----------|------|--------|
| | Mat'l No. | JIS | DIN | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | Brands |
| 3.1325 | | | AlCuMg1 | | | | | | | | | | AD35 |
| 3.1655 | A2011 | | AlCuSiPb | | | | | | | | | | |
| 3.2315 | | | AlMgSi1 | | | | | | | | | | AK9 |
| 3.4345 | | | AlZnMgCu0.5 | 7050 | L86 | | AZ4GU/9051 | | 811-04 | | | | |
| 3.4365 | 7075 | | AlZnMgCu1.5 | 7075 | 7075 | | 7075 | | AlZn5.8MgCuCr | | | | B95 |

| N | VDI 3323 23 | | Material Description Aluminum-cast, alloyed | | | | Composition / Structure / Heat Treatment ≤ 12% Si, Not Curable | | | | HB 75 | HRC | |
|----------|-----------------------|-----|--|---------------|-------|----|---|------|-----|-----------|----------|------|--------|
| | Mat'l No. | JIS | DIN | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | Brands |
| 3.2163 | | | G-ALSi9Cu3 | | | | | | | | | | VAL8 |
| 3.2382 | | | GD-ALSi10Mg | | | | | | | | | | |
| 3.2383 | | | G-ALSi0Mg(Cu) | A360.2 | LM9 | | | 4253 | | | | | |
| 3.2581 | | | G-ALSi12 | | | | | | | | | | |
| 3.3561 | | | G-ALMg5 | | | | | | | | | | |
| 3.5101 | | | G-MgZn4sE1Zr1 | ZE41 | MAG5 | | | | | | | | |
| 3.5103 | | | MgSE3Zn2Zr1 | EZ33 | MAG6 | | GTR3Z2 | | | | | | |
| 3.5812 | | | G-MgAlBZn1 | AZ81 | NMAG1 | | | | | | | | |
| 3.5912 | | | G-MgAlBZn1 | AZ91 | MAG7 | | | | | | | | |
| | | | | A356-72 | 2789 | | NFA32-201 | | | | | | |
| A5052 | | | G-ALSi12 | 356.1 | LM25 | | | 4244 | | | | | AK7 |
| | | | G-ALSi12 | A413.2 | LM6 | | | 4261 | | | | | |
| ADC12 | | | G-ALSi12(Cu) | A413.1 | LM20 | | | 4260 | | | | | AK12 |
| A6061 | | | GD-ALSi12 | A413.0 | | | | 4247 | | | | | |
| A7075 | | | GD-ALSi8Cu3 | A380.1 | LM24 | | | 4250 | | | | | |

Technical Information
Material Groups



| Mat'l No. | JIS | DIN | Material Description | | | Composition / Structure / Heat Treatment | | | | | HB | HRC | |
|-----------|------|--------------|----------------------|-------|----|--|------|-----|-----------|-----|----|-----|------|
| | | | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | | | GOST |
| 2.1871 | | G-AlCu4TiMg | | | | | | | | | | | |
| 3.1754 | | G-AlCu5Ni1.5 | | | | | | | | | | | |
| 3.2371 | | G-AlSi7Mg | 4218B | | | | | | | | | | AK8 |
| 3.2373 | C4BS | G-AlSi9MgWA | SC64D | | | A-57G | 4251 | | | | | | AK9 |
| 3.2381 | | G-AlSi10Mg | | | | | | | | | | | AK12 |
| 3.5106 | | G-MgAg3SEZr1 | QE22 | mag12 | | | | | | | | | |
| | | G-ALMG5 | GD-AISi12 | LMS | | A-5U12 | 4252 | | | | | | |

| Mat'l No. | JIS | DIN | Material Description | | | Composition / Structure / Heat Treatment | | | | | HB | HRC | |
|-----------|-----|-------------|----------------------|-----|----|--|----|-----|-----------|-----|----|-----|--------|
| | | | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | | | GOST |
| 2.0375 | | CuZn36Pb3 | | | | | | | | | | | LS60-2 |
| 2.1090 | | G-CuSn75pb | C93200 | | | U-E7Z5pb4 | | | | | | | |
| 2.1096 | | G-CuSn5ZnPb | c83600 | LG2 | | | | | | | | | |
| 2.1098 | | G-CuSn2Znpb | C83600 | | | | | | | | | | |
| 2.1182 | | G-CuPb15Sn | C23000 | LB1 | | U-pb15E8 | | | | | | | |

| Mat'l No. | JIS | DIN | Material Description | | | Composition / Structure / Heat Treatment | | | | | HB | HRC | |
|-----------|-------|-------------|----------------------|---------|----|--|----|-------|-----------|-----|----|-----|---------|
| | | | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | | | GOST |
| 2.0240 | C2300 | CuZn15 | | | | | | | | | | | L90 |
| 2.0321 | | CuZn37 | C27200 | z108 | | CuZn36,CuZn37 | | C2700 | | | | | L63 |
| 2.0590 | | G-CuZn40Fe | | | | | | | | | | | |
| 2.0592 | | G-CuZn35Al1 | C86500 | U-Z36N3 | | HTB1 | | | | | | | |
| 2.0596 | | G-CuZn34Al2 | C86200 | HTB1 | | U-Z36N3 | | | | | | | LTs23AD |
| 2.1293 | | CuCrZr | C18200 | CC102 | | U-Cr0-8Zr | | | | | | | |

| Mat'l No. | JIS | DIN | Material Description | | | Composition / Structure / Heat Treatment | | | | | HB | HRC | |
|-----------|-----|--------------|----------------------|--------|----|--|----|-----|-----------|-----|----|-----|------|
| | | | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | | | GOST |
| 2.0060 | | E-Cu57 | | | | | | | | | | | |
| 2.0966 | | CuAl10Ni5Fe4 | C63000 | Ca104 | | U-Al10N | | | | | | | BAD |
| 2.0975 | | G-CuAl10Ni | B-148-52 | | | | | | | | | | |
| 2.1050 | | G-CuSn10 | c90700 | CT1 | | | | | | | | | |
| 2.1052 | | G-CuSn12 | C90800 | pb2 | | UE12P | | | | | | | |
| 2.1292 | | G-CuCr3S | C81500 | CC1-FF | | | | | | | | | |

Technical Information
Material Groups



| Mat'l No. | JIS | DIN | Material Description | | | Composition / Structure / Heat Treatment | | | | | HB | HRC | |
|-----------|-----------|------------------|----------------------|--------|----|--|------|-----|-----------|--------------|----|-----|--------|
| | | | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | | | GOST |
| 1.4558 | NCF 800TB | X2NiCrAlTi3220 | N08800 | NA15 | | | | | | | | | |
| 1.4562 | | X1NiCrMoCu32287 | N08031 | | | | | | | | | | |
| 1.4563 | | X1NiCrMoCuN31274 | N08028 | | | Z1NCDU31-27-03 | 2584 | | | | | | EK77 |
| 1.4864 | SUH330 | X12NiCrSi36-16 | 330 | NA17 | | Z12NCS37-18 | | | | | | | N08330 |
| 1.4865 | SCH15 | GX40NiCrSi38-18 | | 330C40 | | | | | | XG50NiCr3919 | | | J94605 |
| 1.4958 | | XSNiCrAlTi3120 | | | | | | | | | | | |

| Mat'l No. | JIS | DIN | Material Description | | | Composition / Structure / Heat Treatment | | | | | HB | HRC | |
|-----------|-----|---------------|----------------------|----|----|--|----|-----|-----------|-----|----|-----|------|
| | | | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | | | GOST |
| 1.4977 | | X40CoCrNi2020 | | | | Z42CNK0WNb | | | | | | | |

| Mat'l No. | JIS | DIN | Material Description | | | Composition / Structure / Heat Treatment | | | | | HB | HRC | | | |
|-----------|---------|--------------|----------------------|-----------|----|--|----|-----|-----------|-----|----|-----|--------|----------------|--------------|
| | | | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | | | GOST | Brands | |
| 2.4360 | | NiCu30Fe | | NA13 | | NU30 | | | | | | | N04400 | Monel400 | |
| 2.4603 | | NiCr30FeMo | 5390A | | | NC22FeD | | | | | | | | Hastelloy G-30 | |
| 2.4610 | | NiMo16Cr16Ti | | | | | | | | | | | N26455 | Hastelloy C-4 | |
| 2.4630 | | NiCr20Ti | | HR5,203-4 | | NC20T | | | | | | | N06075 | Nimonic75 | |
| 2.4631 | NCF 80A | NiCr20TiAl | | Hi40 | | NC20TA | | | | | | | N07080 | KHIN77Yur | Nimonic 80A |
| 2.4642 | NCF 690 | NiCr29Fe | | | | Nnc30Fe | | | | | | | N06690 | Inconel 690 | |
| 2.4856 | | NiCr22Mo9Nb | | NA21 | | NC22FeDNb | | | | | | | N06625 | Inconel 625 | |
| 2.4858 | | NiCr21Mo | | NA16 | | NC21FeDU | | | | | | | N08825 | KHN38VT | Incolloy 825 |

| Mat'l No. | JIS | DIN | Material Description | | | Composition / Structure / Heat Treatment | | | | | HB | HRC | | |
|-----------|-----|------------------|----------------------|--------|----|--|----|-----|-----------|-----|----|-----|--------|--------------|
| | | | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | | | GOST | Brands |
| 2.4375 | | NiCu30Al | 4676 | NA18 | | NU30AT | | | | | | | N05500 | MonelK500 |
| 2.4662 | | NiFe35Cr14MoTi | 5660 | | | ZSNCDT42 | | | | | | | N09901 | Incolloy 901 |
| 2.4668 | | NiCr19Fe19NbMo | 5383 | HR8 | | NC19eNB | | | | | | | N07718 | Inconel 718 |
| 2.4670 | | S-NiCr13Al16MoNb | 5391 | Mat-46 | | NC12AD | | | | | | | | Nimocast 713 |
| 2.4694 | | NiCr16IE7TiAl | | | | | | | | | | | N07751 | Inconel 751 |
| 2.4955 | | NiFe25Cr20NbTi | | | | | | | | | | | | |
| 2.4964 | | CoCr20W15Ni | 5772 | | | KC20WN | | | | | | | | Haynes 25 |
| | | CoCr22W14Ni | AMS 5772 | | | KC22WN | | | | | | | | |

Technical Information
Material Groups

Please visit global.yg1.com/mat for material search



| Mat'l No. | JIS | DIN | Material Description | | | | | Composition / Structure / Heat Treatment | | | | | HB | HRC | | | | |
|-----------|-----|----------------|----------------------|----|----|----------|----|--|-----------|-----|--------|--------|----------|--------------------|---|--|-----------|-----------|
| | | | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | Brands | | | | | | |
| | | | | | | | | | | | | | S | VDI 3323 35 | Material Description Heat resistant super alloys | Composition / Structure / Heat Treatment Ni or Co Based, Cast | HB 320 | HRC 34 |
| 2.4669 | | NiCr15Fe7TiAl | | | | NC15TNbA | | | | | | N07750 | | Inconel X750 | | | | |
| 2.4685 | | G-NiMo28 | | | | | | | | | | N10665 | | Hastelloy B | | | | |
| 2.4810 | | G-NiMo30 | | | | | | | | | | | | Hastelloy C | | | | |
| 2.4973 | | NiCr19Co11MoTi | AMS 5399 | | | NC19KDT | | | | | | VTS-1 | | | | | | |
| 3.7115 | | TiAl5Sn2 | | | | | | | | | R54520 | VT1-00 | | ATI Grade 6 | | | | |

| Mat'l No. | JIS | DIN | Material Description | | | | | Composition / Structure / Heat Treatment | | | | | HB | HRC | | | | |
|-----------|-----|------------------|----------------------|------|----|-------|----|--|-----------|-----|------|--------|----------|--------------------|---|---|--------------|-----|
| | | | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | Brands | | | | | | |
| | | | | | | | | | | | | | S | VDI 3323 36 | Material Description Titanium alloys | Composition / Structure / Heat Treatment Pure Titanium | HB 400 Rm | HRC |
| 2.4674 | | NiCo15Cr10MoAlTi | AMS 5397 | | | | | | | | | N13100 | | N 100 | | | | |
| 3.7025 | | Ti1 | R50250 | 2TA1 | | | | | | | | R50250 | | ATI 30 CP Gr. 1 | | | | |
| 3.7225 | | Ti1pd | R52250 | TP1 | | | | | | | | R52250 | | | | | | |

| Mat'l No. | JIS | DIN | Material Description | | | | | Composition / Structure / Heat Treatment | | | | | HB | HRC | | | | |
|-----------|-----|------------------|----------------------|---------|----|----------|----|--|-----------|-----|------|--------|-----------|--------------------|---|---|---------------|-----|
| | | | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | Brands | | | | | | |
| | | | | | | | | | | | | | S | VDI 3323 37 | Material Description Titanium alloys | Composition / Structure / Heat Treatment Alpha + Beta Alloys, Hardened | HB 1050 Rm | HRC |
| 3.7124 | | TiCu2 | | | | 2TA21-24 | | | | | | | | | | | | |
| 3.7145 | | TiAl6Sn2Zr4Mo2Si | R54620 | | | | | | | | | R54620 | | | | | | |
| 3.7165 | | TiAl6V4 | AMS R56400 | TA10-13 | | T-A6V | | | | | | | VT6 | | | | | |
| 3.7185 | | TiAl4Mo4Sn2 | | TA45-51 | | | | | | | | | | | | | | |
| 3.7195 | | TiAl3V2.5 | | | | | | | | | | R56320 | ATI 3-2.5 | | | | | |
| | | TiAl4Mo4Sn4Si0.5 | | | | | | | | | | | | | | | | |
| | | TiAl5Sn2.5 | AMS R54520 | TA14/17 | | T-A5E | | | | | | | | | | | | |
| | | Ti6Al4VELI | AMS R56401 | TA11 | | | | | | | | | | | | | | |

Technical Information
Material Groups

Please visit global.yg1.com/mat for material search



| Mat'l No. | JIS | DIN | Material Description | | | | | Composition / Structure / Heat Treatment | | | | | HB | HRC | | | | |
|-----------|-------------|---------------|----------------------|----------|---------------|---------------|------|--|-----------|-----|------|--------|----------|--------------------|--|--|-----------|-----------|
| | | | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | Brands | | | | | | |
| | | | | | | | | | | | | | H | VDI 3323 38 | Material Description Hardened steel | Composition / Structure / Heat Treatment Hardened | HB 550 | HRC 55 |
| 1.1231 | S 70 C-CSP | Ck 67 | 1070 | 060 A 67 | C 675 | XC 68 | 1770 | C 70 | F 5103 | | | | 70 | | | | | |
| 1.1248 | C 75 | Ck 75 | 1078, 1080 | 060 A 78 | C 755 | XC 75 | 1774 | C 75 | F 5107 | | | | 75 | | | | | |
| 1.1274 | SUP 4 | Ck 101 | 1095 | 060 A 96 | C 1005 | XC100 | 1870 | C100 | F 5117 | | | | | | | | | |
| 1.1545 | SK 3 | C 105 W1 | W1 | BW 2 | C 105U | Y1 105 | 1880 | C 100 KU | F 5118 | | | | U10A | | | | | |
| 1.2762 | | 75CrMoNiW67 | - | - | - | - | - | - | - | | | | | | | | | |
| 1.3401 | SCMnH1 | GX120Mn12 | A128(A) | | | Z120M12 | 2183 | GX120Mn12 | F 8251 | | | | 110G13L | | | | | |
| 1.4021 | SUS 420 J1 | X 20 Cr 13 | 420 | 420 S 37 | X 20 Cr 13 | Z 20 C 13 | 2303 | X 20 Cr 13 | F 5261 | | | | 20KH13 | | | | | |
| 1.4109 | SUS 440 A | X 65 CrMo 14 | 440 A | - | X 70 CrMo 15 | Z 70 D 14 | - | - | - | | | | ATI 440A | | | | | |
| 1.4112 | SUS 440 B | X 90 CrMoV 18 | 440 B | 409 S 19 | X 90 CrMoV 18 | Z 2 CND 18 05 | 2327 | X CrTi 12 | | | | | | | | | | |
| 1.4125 | SUS 440 C | X 105 CrMo 17 | 440 C | - | X 105 CrMo 17 | Z 100 CD 17 | - | X 105 CrMo 17 | | | | | 95KH18 | | | | | |
| 1.6746 | | 32NiCrMo14-5 | - | 832M31 | 32NiCrMo145 | 35NCD14 | - | - | | | | | ATI 440C | | | | | |
| 1.7176 | SUP9(A) | 55Cr3 | 5155 | 527A60 | 48 | 55C3 | 2253 | 55Cr3 | | | | | | | | | | |
| 1.7225 | SCM 440 (H) | 42CrMo4 | 4140 | 708 M 40 | 42 CrMo 4 | 42 CD 4 | 2244 | 42 CrMo 4 | F 1252 | | | | 38HM | | | | | |

| Mat'l No. | JIS | DIN | Material Description | | | | | Composition / Structure / Heat Treatment | | | | | HB | HRC | | | | |
|-----------|---------|--------------------|----------------------|-----------|-------------------|--------------|------|--|-----------|---------|------|--------|---------------|--------------------|---|--|-----------|-----------|
| | | | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | Brands | | | | | | |
| | | | | | | | | | | | | | H | VDI 3323 40 | Material Description Chilled cast iron | Composition / Structure / Heat Treatment Cast | HB 400 | HRC 42 |
| 0.9620 | | GX260NiCr42 | A532 B | Grade 2 A | GIN-HV520 | FB N4 Cr2 BC | 0512 | - | | F 45001 | | | Ni-Hard2 | | | | | |
| 0.9625 | | GX330NiCr42 | A532 IA | Grade 2 B | GIN-HV500 | FB N4 Cr2 HC | 0513 | - | | F 45000 | | | Ni-Hard1 | | | | | |
| 0.9630 | | GX300 CrNiSi 9 5 2 | A532 ID | Grade 2 C | GIN-HV600 | FB Cr9 Ni5 | 0457 | - | | F 45003 | | | Ni-Hard 4 | | | | | |
| 0.9640 | | GX300CrMoNi1521 | - | - | - | - | - | - | | F 45005 | | | | | | | | |
| 0.9650 | | GX260Cr27 | - | Grade 3 D | - | - | 0466 | - | | | | | | | | | | |
| 0.9655 | | GX300CrNiMo271 | - | Grade 3 E | - | - | - | - | | | | | 20C 25N2052 | | | | | |
| 1.4841 | SUH 310 | X15CrNiSi25-20 | 310 | 314531 | X 15 CrNiSi 25 20 | Z15CNS25-20 | - | - | | S 31400 | | | Cronifer 2520 | | | | | |

| Mat'l No. | JIS | DIN | Material Description | | | | | Composition / Structure / Heat Treatment | | | | | HB | HRC | | | | |
|-----------|-----|--------------------|----------------------|----|----|-------|----|--|-----------|-----|------|--------|----------|--------------------|--|--|-----------|-----------|
| | | | AISI/ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | Brands | | | | | | |
| | | | | | | | | | | | | | H | VDI 3323 41 | Material Description Hardened cast iron | Composition / Structure / Heat Treatment Hardened | HB 550 | HRC 55 |
| 0.9635 | | GX300 CrMo 15 3 | - | - | - | - | - | - | | | | | | | | | | |
| 0.9645 | | GX260 CrMoNi 20 21 | - | - | - | - | - | - | | | | | F 45007 | | | | | |

Technical Information

Comparison Chart - Turning Chipbreakers

Negative Inserts

| Material | YG | Sandvik | Iscar | Kenna metal | Seco | Walter | Mitsu bishi | Kyocera | Tungaloy | Sumi tomo | Taegutec | Korloy | Duracarb |
|-----------------|------|---------|--------|-------------|---------|---------|-------------|----------|-----------|-----------|----------|--------|----------|
| STEEL | UF | PF | F3P NF | FF FN | F1 MF2 | FP5 | FH LP | GP PP | TF | FL SP | FG FA | VF HU | 41 |
| | UL | | PP NF | | | FP5 | FY SY | CQVF | TSF | LU | FC FT | HC | 43 |
| | UM | | TF | MN | M3 | MP3 | MP | HS | TM | GU UX | MC PC | VM GM | 46 |
| | UG | PM | GN M3P | MN | M3 MR3 | MP5 | MP MA | PS | TM | UG | MT PC | GR HR | 45 |
| | UC | PR | NR | MP RP | MR4 | RP5 | Standard | Standard | TH | UZ | MG- | B25 | 53 |
| | UR | PR | NR R3P | UN RN MG- | MR3 MR6 | RP7 | RP MH RK | PT PH | THS | ME MU | RT | GR | |
| STAINLESS STEEL | MF | MF | SF | FF | MF1 | NF4 | LM | MQ | SF HRF | SU | EA ML | HA | |
| | MM | MM | M3M | MP | MF3 MF4 | NM4 | MM | MS | SM | GU | EM | GS | 42 |
| | MR | MR | F3M | RF | M5 | NR4 | RM | MS MU | SH | EM | ET RT | RM | |
| CAST IRON | UC | PR | NR | MP RP | MR4 | MK5 | Standard | Standard | All Round | UZ | MG- | B25 | 53 |
| | UR | PR | NR R3P | UN RN MG- | MR3 MR6 | RK5 RK7 | RP MH RK | PT PH | CH | ME MU | RT | GR | |
| | ..MA | | | RP | MR7 | ..MA | MG- | C | CH | GZ | ..MA | | 53 |

Positive Inserts

| Material | YG | Sandvik | Iscar | Kenna metal | Seco | Walter | Mitsu bishi | Kyocera | Tungaloy | Sumi tomo | Taegutec | Korloy | Duracarb |
|-----------------|----|---------|-------|-------------|------|---------|-------------------|---------|----------|-----------|----------|--------|----------|
| STEEL | UF | PF | PF | LF UF | MF2 | PF2 FP4 | FM LM LP | GQ PP | 01 PSF | FP | FG | HFP | 41 |
| | UG | PM | | MF | MF3 | MP4 FP6 | MP Standard MM MV | HQ | PS PM | MU | MT | C25 | 51 |
| STAINLESS STEEL | UF | PF | PF | LF | MF2 | MM4 PS5 | FM LM LP | GQ PP | PM | FP | FG | HFP | 41 |
| CAST IRON | UG | PM | | UF | MF3 | MK4 RK4 | MP Standard MM MV | HQ | CM | MU | MT | C25 | 51 |
| ALUMINUM | AL | | AS | MF | AL | PF2 PM2 | AZ | CF CK | AL | AG | FL | AK | AU |

Technical Information

Comparison Chart - Turning Grades

| ISO | YG | Sandvik | Iscar | Kenna metal | Seco | Walter | Mitsu bishi | Kyocera | Tungaloy | Sumi tomo | Taegutec | Korloy | Duracarb |
|-----|----------------|---------|--------|-------------|--------|--------|-------------|---------|----------|-----------|----------|--------|----------|
| P10 | YG3010 | GC4305 | IC8005 | KCP05 | TP0501 | WPP01 | UE6105 | CA5505 | T9105 | AC8015P | TT8115 | NC3010 | DC9015 |
| | | GC4205 | IC428 | KC9105 | TP0500 | WPP055 | MC6015 | CA510 | T9115 | AC810P | | NC3215 | |
| | | GC4215 | IC8150 | KC9110 | TP1500 | WPP105 | UE6110 | CA5515 | | | | | |
| P20 | YG3020 (YG801) | GC4325 | IC8250 | KCP25 | TP2501 | WPP205 | MC6025 | CA525 | T9125 | AC8025P | TT8125 | NC3220 | DC9025 |
| | | GC4225 | IC9015 | KC9125 | TP2500 | | UE6020 | CA5525 | | AC820P | | NC3225 | NC3120 |
| P30 | YG3030 (YG801) | GC4335 | IC8350 | KCP30 | TP3501 | WPP305 | MC6035 | CA530 | T9135 | AC8035P | TT5100 | NC3030 | DC9025 |
| | | GC4235 | IC8025 | KC9140 | TP3500 | | UE6035 | CA5535 | | AC830P | TT8135 | NC5330 | DC8035 |
| | | VP15TF | | | | | CR9025 | | | AC630M | | PC3545 | |
| M10 | YG211 | GC2015 | IC807 | KCS10 | CP200 | WSM105 | MC7015 | CA6515 | T6120 | AC610M | TT9215 | PC8105 | |
| | | GC1115 | IC6015 | KCM15(B) | TS2000 | | VP10RT | PR930 | AH110 | | TT5080 | PC8110 | |
| | | | IC8150 | KC5010 | | | US7020 | | AH8005 | | | | |
| M20 | YG3030 | GC2025 | IC3028 | KCM25(B) | TM2000 | WMP205 | MC7025 | CA6525 | T6130 | AC6030M | TT9225 | PC8115 | |
| | | GC1125 | IC808 | KCU25 | TS2500 | WSM205 | VP15TF | PR1025 | AH120 | AC610M | | NC9115 | |
| | | | IC8250 | KC5025 | | WSM21 | VP20MF | PR1125 | AH725 | AC520U | | PC5300 | |
| | | | | | | | VP20RT | PR1425 | SH725 | | | | |
| | | | | | | | UP20M | GH330 | | | | | |
| M30 | YG213 | GC2035 | IC6025 | KCM35(B) | CP500 | WSM305 | US735 | PR1535 | AH630 | AC6030M | TT9235 | NC9125 | DC8035 |
| | | | IC8350 | | | | MP7035 | | SH730 | AC830P | TT9080 | NC5330 | |
| | | | | | | | | | GH730 | | | PC9030 | |
| M40 | YG214 | | | | CP600 | | US735 | | AH645 | AC6040M | TT9235 | NC9135 | |
| | | | | | TM4000 | | MP7035 | | | AC530U | TT8080 | PC5400 | |
| | | | | | TP40 | | | | | | | | |
| K05 | YG1001 | GC3205 | IC5005 | KCK05 | TK1001 | WKK105 | MC5005 | CA4505 | T5105 | AC405K | TT7005 | NC6205 | DC820 |
| | | | | | TK1000 | | UC5105 | CA4010 | | | | DC610 | |
| K10 | YG1001 | GC3210 | IC5010 | KCK15 | TK1001 | WKK105 | MC5015 | CA4515 | T515 | AC415K | TT7310 | NC6210 | |
| | | | IC5100 | | TK1000 | | UC5115 | CA4115 | | | TT7015 | | |
| K15 | YG3010 | GC3215 | IC8150 | KCK20 | TK2001 | WKK205 | UE6110 | CA4120 | T5125 | AC420K | TT6300 | NC6215 | |
| | | | | | TK2000 | WKP305 | VP15TF | | | | | | |
| S10 | YG211 | GC1105 | IC807 | K313 | TS2000 | WSM105 | VP05RT | CA6515 | AH110 | AC510U | TT9215 | PC8105 | DC820 |
| | | S05F | IC808 | KCS10 | TS2050 | WS10 | MP9005 | PR1305 | AH120 | | TT5080 | PC8110 | DC610 |
| | | H13A | | KCU10 | TS2500 | | VP10RT | PR1310 | AH8005 | | | PC8115 | |
| | | | | KC5010 | CP200 | | MP9015 | PR1310 | AH8015 | | | | |
| | | | | | | | | | AH905 | | | | |
| | | | | | | | | | SH730 | | | | |
| S20 | YG213 | GC1115 | IC806 | KCU25 | 890 | WSM205 | VP15TF | CA6525 | AH725 | AC520U | TT9225 | NC9125 | |
| | | | | KC5025 | 883 | WSM21 | VP20RT | PR1125 | | | TT9080 | NC9135 | |
| | | | | | | | | PR1325 | | | | PC5300 | |
| | | | | | | | | PR1535 | | | | | |
| S30 | YG214 | GC1125 | | | CP500 | WSM305 | | PR1125 | | | TT9235 | PC5400 | |
| | | | | | CP600 | | | PR1535 | | | TT8080 | | |

Technical Information

Comparison Chart - Milling Grades

| ISO | YG-1 | Sandvik | Iscar | Kennametal | Seco | Walter | Mitsubishi | Kyocera | Tungaloy | Sumitomo | Taegutec | Korloy |
|-----|----------------|----------------------------|-------------------------|----------------------------|---------------------------|------------------|-------------------------------------|---------------------------|-----------------------------------|----------------------------|------------------|--|
| P20 | YG712 | GC4220 GC4230 | IC950 | KCPM20 KC522M | MP2500 MP3000 T250M | WKP25 WKP25S | MP6120 VP15TF | PR720 PR1025 PR1225 | T3130 AH330 GH330 | ACP200 | TT7080 TT7030 | NC5330 PC3500 PC3600 |
| P30 | YG622 YG602 | GC1025 GC1030 | IC808 IC907 IC908 | KC522M KC635M KC927M | F25M F30M | WAM30 WKP35 | MP6120 VP15TF MP6130 F7030 | PR630 PR830 PR1230 | AH725 AH730 AH120 GH130 | ACP300 ACZ350 | TT9080 TT9030 | NC5340 NCM325 PC5300 |
| M20 | YG602 | GC1125 GC1025 GC1030 | IC808 IC907 IC908 | KC522M KC635M | MP2500 F25M F30M | WQM35 WSM35S | VP15TF MP7130 VP20RT | PR730 PR1025 PR1225 | T3030 AH725 AH120 AH4035 | ACP200 ACM100 ACM200 | TT9030 TT9080 | NC5330 PC5300 PC9530 NC5340 NCM325 |
| K10 | YG5020 | GC3330 | IC5100 | KC915M | MK1500 MP1500 | WAK15 | MP8010 MC5020 | | | ACK100 | TT7515 | PC8110 PC6510 |
| K20 | YG622 | GC3040 | IC810 IC910 | KCK15 KC520M | MK2050 | WKK25 | VP15TF | PR1210 PR1510 | T1115 AH110 | ACK200 ACK300 | TT6080 | NC5330 PC5300 NC5340 |
| S20 | YG602 | S30T GC1025 S40T | IC328 IC907 | KC510M KC635M | MS2050 MS2500 | WSM35S WSP45S | MP9120 VP15TF | PR905 PR1025 | AH725 | AC520U | TT9030 TT8020 | PC5300 PC5400 |

Search

| Description | Page | Description | Page | Description | Page |
|---------------|----------|--------------------------|------|--------------|------|
| INSERT | | | | | |
| ADKT | 121 | VCGT | 84 | PTTNR/L | 38 |
| AOMT | 121 | VCMT | 84 | PWLNRL/L | 43 |
| APKT | 122, 136 | VNMA | 73 | SCACR/L | 29 |
| APMT | 123 | VNMG | 73 | SCLCR/L | 29 |
| CCGT | 78 | WCMX | 147 | SDJCR/L | 31 |
| CCMT | 78 | WNMA | 75 | SDNCN | 31 |
| CNMA | 60 | WNMG | 75 | SRDCN | 34 |
| CNMG | 60 | | | SRGCR/L | 34 |
| DCGT | 79 | MILLING CUTTER | | | |
| DCMT | 79 | ...-ADKT15-... | 113 | SSSCR/L | 35 |
| DNMA | 63 | ...-AOMT12-... | 113 | STFCR/L | 37 |
| DNMG | 63 | ...-APKT10-... | 114 | STGCR/L | 37 |
| KNUX | 66 | ...-APKT10-... (Helical) | 119 | STJCR/L | 37 |
| ODMT | 102 | ...-APKT16-... | 116 | STUCR/L | 37 |
| ODMW | 102 | ...-APKT16-... (Taper) | 135 | SVHBR/L | 40 |
| OFER | 103 | ...-APMT11-... | 118 | SVHCR/L | 41 |
| OFMT | 103 | ...-APMT16-... | 118 | SVJBR/L | 40 |
| ONHU | 104 | ...-M08-... | 137 | SVJCR/L | 41 |
| ONMU | 104 | ...-M10-... | 137 | SVVBN | 40 |
| RBEX | 132 | ...-M12-... | 137 | SVVCN | 41 |
| RCMT | 80 | ...-M16-... | 137 | TCLNR/L | 30 |
| RDKT | 129 | ...-ODMT06-... | 99 | TDHNR/L | 32 |
| RDKW | 129 | ...-OFER07-... | 98 | TDJNR/L | 32 |
| RDMT | 130 | ...-OFMT05-... | 99 | TDNNN | 32 |
| RDMW | 130 | ...-ONMU08-... | 96 | TSDNN | 36 |
| RPMT | 131 | ...-RDKT08-... | 126 | TSKNR/L | 36 |
| RPMW | 131 | ...-RDKT10-... | 126 | TSSNR/L | 36 |
| SCMT | 81 | ...-RDKT12-... | 127 | TTGNR/L | 38 |
| SDCN | 105 | ...-RPMT08-... | 128 | TTJNR/L | 39 |
| SDKN | 105 | ...-RPMT10-... | 128 | TVJNR/L | 42 |
| SDMT | 134 | ...-RPMT12-... | 128 | TVVNN | 42 |
| SDMW | 134 | ...-SDMW12-... | 133 | TWLNRL/L | 43 |
| SEKN | 106 | ...-SE12T3-... | 100 | ...-MTFNR/L | 52 |
| SEKR | 106 | ...-SEKT12-... | 100 | ...-MTUNR/L | 52 |
| SEKT | 107 | ...-SNMX12-... | 97 | ...-MWLNRL/L | 57 |
| SEMT | 108 | ...-SPKN12-... | 101 | ...-PCLNR/L | 46 |
| SNMA | 67 | ...-TPKN16-... | 120 | ...-PDQNR/L | 49 |
| SNMG | 67 | ...-TPKN22-... | 120 | ...-PDUNR/L | 49 |
| SNMX | 109 | | | ...-PSKNR/L | 50 |
| SPCN | 110 | INSERT DRILL | | | |
| SPKN | 110 | YGWC | 140 | ...-PTUNR/L | 53 |
| SPKR | 110 | TURNING HOLDER | | | |
| SPMT | 111 | CKJNR/L | 33 | ...-PWLNR/L | 57 |
| SPMX | 146 | MTJNR/L | 39 | ...-SCFCR/L | 44 |
| SPUN | 112 | MWLNRL/L | 43 | ...-SCLCR/L | 45 |
| TCGT | 82 | PCBNR/L | 30 | ...-SDQCR/L | 47 |
| TCMT | 82 | PCLNR/L | 30 | ...-SDUCR/L | 48 |
| TDN | 87 | PDJNR/L | 32 | ...-STFCR/L | 51 |
| TDP | 87 | PDNNN | 32 | ...-STUCR/L | 51 |
| TDY | 87 | PSBNR/L | 36 | ...-SVJBR/L | 54 |
| TNMA | 69 | PSDNN | 36 | ...-SVQBR/L | 54 |
| TNMG | 69 | ...-TCLNR/L | 46 | ...-SVQCR/L | 55 |
| TNUX | 72 | PSKNR/L | 36 | ...-SVUBR/L | 54 |
| TPCN | 124 | PSSNR/L | 36 | ...-SVUCR/L | 55 |
| TPKN | 124 | PTFNR/L | 38 | ...-TCLNR/L | 46 |
| TPKR | 124 | PTGNR/L | 38 | ...-TDQNR/L | 49 |
| TPUN | 125 | PTJNR/L | 39 | ...-TDUNR/L | 49 |
| VBMT | 83 | | | ...-TTUNR/L | 53 |
| | | | | ...-TVUNR/L | 56 |
| | | | | ...-TWLNRL/L | 58 |