

材料特性データ一覧

[国際単位系(SI単位系)] 表示

[国際単位系(SI単位系)] 表示

| 分類 | 材質 | 硬さ | | 引張特性 | | 物理的特性 | | |
|------------------|------------------|-------|---------|-----------------------------|---------------------------|--|----------------------------|------|
| | | HRC | HB | 0.2%耐力 N/mm ² | 引張強さ N/mm ² | 熱膨張係数 ×10 ⁻⁶ /°C [20~200°C] | 熱伝導率 W/(m・°C) [20°C] | |
| 炭素鋼 | F-SS400 | — | 116~150 | 275 (降伏点) | 450 | 13.1 [0~300°C] | 58.6 [0°C] | |
| | F-S55C | 6~22 | 170~240 | 366 | 749 | 12.6 [25~200°C] | 46.0 [50°C] | |
| ブリハードン鋼 | HPM7 | 29~33 | 279~311 | 853 | 973 | 12.2 | 34.3 | |
| | PXA30 | 30~33 | 286~311 | 845 | 980 | 12.7 [30~200°C] | 34.7 | |
| | PX5 | 30~33 | 286~311 | 845 | 980 | 12.7 [30~200°C] | 34.7 | |
| | GO40F | 36~40 | 336~371 | 1,079 | 1,275 | 12.2 [30~200°C] | 47.3 | |
| | HPM-MAGIC | 37~41 | 344~381 | 1,020 | 1,200 | 12.3 [30~200°C] | 31.4 | |
| | HPM1 | 37~41 | 344~381 | 1,010 | 1,216 | 11.8 | 32.7 | |
| | NAK55 | 37~43 | 344~400 | 981 | 1,255 | 12.5 | 38.9 | |
| | NAK80 | 37~43 | 344~400 | 981 | 1,255 | 12.5 | 38.9 | |
| | CENA1 | 37~42 | 344~390 | 1,150 | 1,225 | 11.4 | 28.1 | |
| | HPM-PRO | 37~41 | 344~381 | 1,020 | 1,200 | 13.0 [30~200°C] | 38.3 | |
| | DH2F | 38~42 | 353~390 | 1,100 | 1,330 | 10.8 | 25.5 | |
| | FDAC | 38~42 | 353~390 | 1,060 | 1,240 | 11.7 [20~100°C] | 30.5 | |
| | ステンレス | HPM77 | 29~33 | 279~311 | 845 | 990 | 10.7 [30~200°C] | 22.3 |
| | | HPM38 | 50~55 | — | 1,618 | 1,912 | 11.9 | 25.1 |
| 29~33HRC(ブリハードン) | | | — | — | <52HRC> | — | <53HRC> | — |
| STAVAX ESR | 50~55 | — | 1,610 | 2,050 | 11.0 | 16.0 | | |
| | 27~35HRC(ブリハードン) | — | — | <55HRC> | — | <50HRC> | — | |
| ※1 | F-SKD61 | 53以下 | — | 1,070 | 1,250 | 12.5 | 30.5 | |
| ※2 | HPM31 | 55~60 | — | 1,490 | 2,120 | 12.3 | 28.5 | |
| | | | | <61HRC> | — | <60HRC> | — | — |
| | PD613 | 56~61 | — | 1,815 | 2,280 | 11.7 [30~200°C] | 28.5 <60HRC> | |
| RIGOR | 54~59 | — | — | — | 11.6 | 26.0 <62HRC> | | |

※1：熱間工具鋼 ※2：プラスチック金型向けダイス鋼

| 分類 | 材質 | 硬さ | | 引張特性 | | 物理的特性 | | |
|------------------------|-------|-----------|-------------------|-----------------------------|---------------------------|--|----------------------------|--------------|
| | | HRC | HB | 0.2%耐力 N/mm ² | 引張強さ N/mm ² | 熱膨張係数 ×10 ⁻⁶ /°C [20~200°C] | 熱伝導率 W/(m・°C) [20°C] | |
| 焼入焼戻し鋼 | 冷間工具鋼 | F-SK3 | 58~63 | — | — | 1,670 | 11.3 | 45.2 |
| | | F-SKS3 | 60~62 | — | — | 1,370 | 12.4 | 34.7 |
| | | F-SKD11 | 58~63 | — | 1,570 | 1,810 | 12.5 | 29.3 |
| | | SLD-MAGIC | 60~62 | — | 1,780 | 1,890 | 12.3 | 28.9 |
| | | DC53 | 60~63 | — | — | — | 12.0 | 23.9 |
| | | ARK1 | 58~62 | — | — | 1,690 | 12.4 | 29.5 |
| | | ACD37 | 58~62 | — | — | — | 13.1 | 46.0 [100°C] |
| | | SKH51 | 63以上 | — | — | — | 11.2 | — |
| | | HAP40 | 66以上 | — | — | — | 10.3 | 19.3 |
| | | VANADIS23 | 56~65 | — | — | — | 11.7 | 23.9 |
| | | ASP23 | 56~65 | — | — | — | 11.7 | 23.9 |
| | | アルミ合金 | AAG(A5052 H112相当) | — | 59 | 100 | 200 | 23.8 |
| AAS(A7075 T651,T652相当) | — | | 150 | 420 | 520 | 23.6 | 130 | |

材料特性データ一覧

[旧形単位系(CGS, MKS単位系)] 表示

[旧形単位系(CGS, MKS単位系)] 表示

| 分類 | 材質 | 硬さ | | 引張特性 | | 物理的特性 | | |
|---------|-----------|------------|---------------------------|-------------------------------|-----------------------------|--|---------------------------------|-------|
| | | HRC | HB | 0.2%耐力 kgf/mm ² | 引張強さ kgf/mm ² | 熱膨張係数 ×10 ⁻⁶ /°C [20~200°C] | 熱伝導率 cal/(cm·s·°C) [20°C] | |
| 炭素鋼 | F-SS400 | — | 116~150 | 28 (降伏点) | 46 | 13.1 [0~300°C] | 0.14 [0°C] | |
| | F-S55C | 6~22 | 170~240 | 37.3 | 76.4 | 12.6 [25~200°C] | 0.110 [50°C] | |
| ブリハードン鋼 | HPM7 | 29~33 | 279~311 | 87.0 | 99.2 | 12.2 | 0.082 | |
| | PXA30 | 30~33 | 286~311 | 86 | 100 | 12.7 [30~200°C] | 0.083 | |
| | PX5 | 30~33 | 286~311 | 86 | 100 | 12.7 [30~200°C] | 0.083 | |
| | GO40F | 36~40 | 336~371 | 110 | 130 | 12.2 [30~200°C] | 0.113 | |
| | HPM-MAGIC | 37~41 | 344~381 | 104 | 122 | 12.3 [30~200°C] | 0.075 | |
| | HPM1 | 37~41 | 344~381 | 103 | 124 | 11.8 | 0.078 | |
| | NAK55 | 37~43 | 344~400 | 100 | 128 | 12.5 | 0.093 | |
| | NAK80 | 37~43 | 344~400 | 100 | 128 | 12.5 | 0.093 | |
| | CENA1 | 37~42 | 344~390 | 117 | 125 | 11.4 | 0.067 | |
| | HPM-PRO | 37~41 | 344~381 | 104 | 122 | 13.0 [30~200°C] | 0.068 | |
| | DH2F | 38~42 | 353~390 | 112 | 136 | 10.8 | 0.061 | |
| | FDAC | 38~42 | 353~390 | 108 | 126 | 11.7 [20~100°C] | 0.073 | |
| | ステンレス | HPM77 | 29~33 | 279~311 | 86 <32HRC> | 101 | 10.7 [30~200°C] | 0.053 |
| | | HPM38 | 50~55 | — | 165 <52HRC> | 195 | 11.9 <53HRC> | 0.060 |
| | | STAVAX ESR | 50~55 27~35HRC(ブリハードン) | — | 164 <55HRC> | 209 | 11.0 <50HRC> | 0.038 |
| ※1 | F-SKD61 | 53以下 | — | 109 <40HRC> | 127 | 12.5 <45HRC> | 0.073 | |
| 焼入焼戻し鋼 | HPM31 | 55~60 | — | 152 <61HRC> | 216 | 12.3 <60HRC> | 0.068 | |
| | PD613 | 56~61 | — | 185 <59HRC> | 233 | 11.7 [30~200°C] <60HRC> | 0.068 | |
| | RIGOR | 54~59 | — | — | — | 11.6 <62HRC> | 0.062 | |

※1：熱間工具鋼 ※2：プラスチック金型向けダイス鋼

| 分類 | 材質 | 硬さ | | 引張特性 | | 物理的特性 | | |
|-----------------|-----------|------------------------|----|-------------------------------|-----------------------------|--|---------------------------------|------|
| | | HRC | HB | 0.2%耐力 kgf/mm ² | 引張強さ kgf/mm ² | 熱膨張係数 ×10 ⁻⁶ /°C [20~200°C] | 熱伝導率 cal/(cm·s·°C) [20°C] | |
| 焼入焼戻し鋼 冷間工具鋼 | F-SK3 | 58~63 | — | — <60HRC> | 170 | 11.3 <197HB:焼なまし状態> | 0.108 | |
| | F-SKS3 | 60~62 | — | — <60HRC> | 140 | 12.4 <62HRC> | 0.083 | |
| | F-SKD11 | 58~63 | — | 160 <60HRC> | 185 | 12.5 <60HRC> | 0.070 | |
| | SLD-MAGIC | 60~62 | — | 182 <60HRC> | 193 | 12.3 | 0.069 | |
| | DC53 | 60~63 | — | — | — | 12.0 <焼なまし> | 0.57 <焼入焼戻し> | |
| | ARK1 | 58~62 | — | — <60HRC> | 172 | 12.4 <59HRC> | 0.070 | |
| | ACD37 | 58~62 | — | — | — | 13.1 <60HRC> | 0.11 [100°C] | |
| | SKH51 | 63以上 | — | — | — | 11.2 | — | |
| | HAP40 | 66以上 | — | — | — | 10.3 | 19.3 | |
| | VANADIS23 | 56~65 | — | — | — | 11.7 <62HRC> | 0.057 | |
| | ASP23 | 56~65 | — | — | — | 11.7 <62HRC> | 0.057 | |
| | アルミ合金 | AAG(A5052 H112相当) | — | 59 | 10 | 20 | 23.8 | 0.33 |
| | | AAS(A7075 T651,T652相当) | — | 150 | 43 | 53 | 23.6 | 0.31 |