

Cemented Carbide Grades and Physical Properties



| Carbide Grade | Grain Size WC | Binder | Binder Content % w/w | Density g/cm ³ | Hardness HV30 | Hardness HRa | Transverse Rupture** N/mm ² | Pressure Resistance** N/mm ² | Fracture Toughness*** N/mm ² . m ^{1/2} | Special Properties/ Applications |
|---------------|---------------|--------|----------------------|---------------------------|---------------|--------------|--|---|--|---|
| RX8-UF | ultrafine | Cobalt | 8.0 | 14.5 | 1860 | 93.2 | 4100 | 6300 | 8.5 | ideal for high performance milling |
| RX12-UF | | | 12.0 | 14.0 | 1680 | 92.2 | 4400 | 6000 | 9.5 | |
| RX3* | submicron | Cobalt | 3.3 | 15.2 | 2000 | 94.0 | 3400 | 6500 | 7.8 | for extreme wear applications |
| RX6 | | | 6.0 | 14.8 | 1820 | 93.1 | 3800 | 6400 | 8.5 | our allrounder for metal cutting |
| RX7 | | | 7.5 | 14.7 | 1740 | 92.7 | 4100 | 6300 | 9.0 | |
| RX10 | | | 10.0 | 14.4 | 1600 | 91.9 | 4300 | 6000 | 9.8 | |
| RX15 | | | 15.0 | 13.9 | 1390 | 90.3 | 4500 | 5500 | 12.5 | gearing, paper knives |
| RF13 | fine | Cobalt | 6.5 | 14.8 | 1690 | 92.5 | 3600 | 5700 | 9.2 | slitting saws, gun drills |
| RF24 | | | 12.0 | 14.3 | 1390 | 90.3 | 4200 | 5200 | 11.2 | wear protection |
| RM13 | medium | Cobalt | 6.5 | 14.8 | 1590 | 91.9 | 3600 | 5500 | 9.5 | for wear applications with higher toughness requirements |
| RM17 | | | 8.5 | 14.6 | 1500 | 91.2 | 3800 | 5300 | 10.4 | |
| RM22 | | | 11.0 | 14.4 | 1390 | 90.3 | 4000 | 5000 | 11.8 | |
| RM30 | | | 15.0 | 14.0 | 1230 | 88.7 | 4200 | 4500 | 14.5 | |
| RCR17 | medium | Cobalt | 8.5 | 14.5 | 1550 | 91.6 | 3700 | 5400 | 10.0 | EDM grades with corrosion inhibitor, optimal stress crack reduction |
| RCR24 | | | 12.0 | 14.2 | 1380 | 90.3 | 3900 | 5000 | 13.0 | |
| RCR30 | | | 15.0 | 13.9 | 1260 | 89.1 | 4100 | 4500 | 17.5 | |
| RB20 | coarse | Cobalt | 10.0 | 14.5 | 1300 | 89.5 | 3800 | 4600 | 12.5 | high toughness; for mining and road construction, hot forming |
| RB30 | | | 15.0 | 14.0 | 1080 | 87.2 | 4000 | 4000 | 18.5 | |
| RB44* | | | 22.0 | 13.4 | 890 | 84.7 | 3800 | 3500 | >20 | |
| RCS12 | submicron | Nickel | 6.0 | 14.8 | 1770 | 92.9 | 3400 | 6000 | 8.1 | corrosion resistant (non-magnetisable on request), FDA |
| RCS17 | | | 8.5 | 14.5 | 1650 | 92.2 | 4000 | 5800 | 8.5 | |
| RCF16 | fine | | 8.0 | 14.5 | 1600 | 91.9 | 3900 | 5500 | 8.3 | |
| RCF24 | | | 12.0 | 14.2 | 1350 | 90.0 | 4200 | 5000 | 11.0 | |
| RCFN22* | | | 11.0 | 14.2 | 1600 | 91.9 | 2100 | 4500 | 8.0 | |
| RCM30* | medium | 15.0 | 14.0 | 1100 | 87.3 | 3800 | 4000 | 13.0 | corrosion resistant, FDA | |

* on request
 ** Approximate value
 *** The measured values K1c depend on the geometry and the preparation of the sample and may differ from the values obtained by different methods. Technical modifications are reserved.

