Comparative Properties of Carbide

Cemented carbides are substantially harder and have better wear resistance than high speed steels. This gives better tool life and allows speeds and feeds to be increased. Tools manufactured from carbide material are often used in more demanding operations where the work material is abrasive or where short cycle times are important. Carbides are inherently brittle and carbide tools are not suitable where there is possible tools deflection, misalignment or where the workpiece cannot be securely clamped. Carbide tools are also unsuitable for use at low speeds due to cold welding of chips and microchipping of cutting edges. Mohawk can assist in the selection of the most suitable grade of carbide for your application.

ISO Application Code	U.S. Industry Code	W	TiC	Ta(Ni)C	Co	Ni	Mo	Density (g/cm^3)	Hardness HV	Transverse Rupture Strength
P01	C8	-	80	-	-	10	10	5.8	1900	850
P01	C8	50	35	7	6	-	-	8.5	1900	110
P05	C7	78	16	-	6	-	-	11.4	1820	1300
P10	C6	69	15	8	8	-	-	11.5	1740	1400
P15	C6	78	12	3	7	-	-	11.7	1660	1500
P20	C6	79	8	5	8	-	-	12.1	1580	1600
P25	C6	82	6	4	8	-	-	12.9	1530	1700
P30	C5	84	5	2	9	-	-	13.3	1490	1850
P40	C5	85	5	-	10	-	-	13.4	1420	1950
P50	-	78	3	3	16	-	-	13.1	1250	2300
K01	C4	97	-	-	3	-	-	15.2	1850	1450
K05	C4	95	-	1	4	-	-	15.0	1780	1550
K10	C3	92	-	2	6	-	-	14.9	1730	1700
K20	C2	94	-	-	6	-	-	14.8	1650	1950
K30	C1	91	-	-	9	-	-	14.4	1400	2250
K40	C1	89	-	-	11	-	-	14.1	1320	2500

*Considerable variation between the products of different manufacturers can occur.