

Grade properties

Cermet

Symbol	Color	Main Component	Ratio	Hardness of Substrate		Fracture Toughness (MPam ^{1/2})	Transverse Strength (MPa)
				(HV)	(GPa)		
TN6010	Gray	TiCN	6.5	1,700	16.7	7.0	2,000
TN6020	Gray	TiCN	6.4	1,500	14.7	10.0	2,500
TN60	Gray	TiCN+NbC	6.6	1,600	15.7	9.0	1,760
TN90	Gray	TiCN+NbC	6.4	1,450	14.2	10.0	1,960
TN100M	Gray	TiCN+NbC	6.7	1,520	14.9	10.5	1,860
TC40	Gray	TiC+TiN	6.0	1,650	16.2	9.0	1,570
TC60	Gray	NbC	8.1	1,500	14.7	10.5	1,670

PVD Coated Cermet

Symbol	Color	Main Component	Coating Layer	Ratio	Hardness of Substrate		Fracture Toughness (MPam ^{1/2})	Transverse Strength (MPa)
					(HV)	(GPa)		
PV7005	Blackish red	MEGACOAT	Thin	6.0	1,650	16.2	8.5	1,470
PV7010	Blackish red	MEGACOAT	Thin	6.5	1,700	16.7	7.0	2,000
PV7020	Gold	TiAlN+TiN	Thin	6.4	1,500	14.7	10.0	2,500
PV60	Gold	TiN	Thin	6.6	1,600	15.7	9.0	1,760
PV90	Gold	TiN	Thin	6.4	1,450	14.2	10.0	1,960

CVD Coated Carbide

Symbol	Color	Main Component	Coating Layer	Ratio	Hardness of Substrate		Fracture Toughness (MPam ^{1/2})	Transverse Strength (MPa)
					(HV)	(GPa)		
CA4010	Gold	Columnar TiCN+Al ₂ O ₃ +TiN	Thick	14.8	1,670	16.4	10.0	3,000
CA4115	Gold	Micro columnar TiCN+Al ₂ O ₃ +TiN	Thick	14.7	1,550	15.2	12.0	2,750
CA4120	Gold	Micro columnar TiCN+Al ₂ O ₃ +TiN	Thick	14.7	1,550	15.2	12.0	2,750
CA4505	Blackish gray	Micro columnar TiCN+Al ₂ O ₃	Thick	14.9	1,780	17.4	9.5	2,350
CA4515	Blackish gray	Micro columnar TiCN+Al ₂ O ₃	Thick	14.9	1,570	15.4	12.0	2,780
CA5505	Gold	Micro columnar TiCN+Al ₂ O ₃ +TiN	Thick	14.7	1,730	17.0	10.0	2,540
CA5515	Gold	Micro columnar TiCN+Al ₂ O ₃ +TiN	Thick	14.7	1,550	15.2	12.0	2,750
CA5525	Gold	Micro columnar TiCN+Al ₂ O ₃ +TiN	Thick	14.5	1,400	13.7	12.0	2,780
CA5535	Gold	Micro columnar TiCN+Al ₂ O ₃ +TiN	Thick	14.1	1,340	13.1	16.5	2,970
CA6515	Gold	Micro columnar TiCN+Al ₂ O ₃ +TiN	Thin	14.7	1,530	15.0	12.0	2,780
CA6525	Gold	Micro columnar TiCN+Al ₂ O ₃ +TiN	Thin	14.7	1,580	13.5	16.0	3,100
CR9025	Gold	Columnar TiCN+TiN	Thick	14.5	1,400	13.7	12.0	2,780

PVD Coated Carbide

Symbol	Color	Main Component	Coating Layer	Ratio	Hardness of Substrate		Fracture Toughness (MPam ^{1/2})	Transverse Strength (MPa)
					(HV)	(GPa)		
PR630	Gold	TiN	Thin	12.5	1,500	14.7	11.0	2,160
PR660	Gold	TiN	Thin	13.7	1,450	14.2	12.0	2,250
PR730	Gold	TiAlN+TiN	Thin	13.7	1,450	14.2	12.0	2,250
PR830	Gold	TiAlN+TiN	Thin	13.7	1,450	14.2	12.0	2,250
PR905	Bluish purple	TiAlN	Thin	14.8	1,670	16.4	10.0	3,000
PR915	Bluish purple	TiAlN	Thin	14.1	1,700	16.7	11.0	4,140
PR930	Reddish gray	TiCN	Thin	14.1	1,700	16.7	11.0	4,140
PR1005	Reddish gray	TiCN	Thin	14.9	1,800	17.6	10.0	3,300
PR1025	Reddish gray	TiCN	Thin	14.5	1,600	15.8	13.0	3,400
PR1115	Purple red	TiAlN	Thin	14.7	1,700	17.2	11.0	3,000
PR1125	Purple red	TiAlN	Thin	14.5	1,600	15.8	13.0	3,400
PR1210	Blackish red	MEGACOAT	Thin	14.8	1,670	16.4	10.0	3,000
PR1225	Blackish red	MEGACOAT	Thin	14.5	1,600	15.8	13.0	3,400
PR1230	Blackish red	MEGACOAT	Thin	13.7	1,450	14.2	12.0	2,250

Carbide

Symbol	Color	Main Component	Ratio	Hardness of Substrate		Fracture Toughness (MPam ^{1/2})	Transverse Strength (MPa)
				(HV)	(GPa)		
PW30	Gray	WC+Co+TiC+TaC	12.5	1,500	14.7	12.0	2,160
KW10	Gray	WC+Co	15.0	1,650	16.2	10.0	1,470
GW15	Gray	WC+Co	14.7	1,700	17.2	11.0	3,000
GW25	Gray	WC+Co	14.5	1,600	15.8	13.0	3,400