

# GRADE PROPERTIES

Cermet								
Grade Name	Color	Main Component	Coating Layer	Density	Hardness of Substrate		Fracture Toughness (MPa <sup>m<sup>1/2</sup></sup> )	Flexural Toughness (MPa)
					(HV)	(GPa)		
TN620	Gray	TiCN	-	6.9	1,550	15.2	9.0	2,500
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								
PV720	Gold	MEGACOAT NANO	Thin coating	6.9	1,550	15.2	9.0	2,500
PV7005	Blackish red	MEGACOAT	Thin coating	6.0	1,650	16.2	8.5	1,470
PV7010	Blackish red	MEGACOAT	Thin coating	6.5	1,700	16.7	7.0	2,000
PV7025	Blackish red	MEGACOAT	Thin coating	6.4	1,500	14.7	10.0	2,500
PV7040	Blackish red	MEGACOAT	Thin coating	6.0	1,650	16.2	9.0	1,570
PV60	Gold	TiN	Thin coating	6.6	1,600	15.7	9.0	1,760
PV90	Gold	TiN	Thin coating	6.4	1,450	14.2	10.0	1,960
CVD Coated Carbide								
CA420M	Gold	Micro columnar TiCN+Al <sub>2</sub> O <sub>3</sub> +TiN	Thick Coating	14.5	1,600	15.8	13.0	3,400
CA4010	Gold	Columnar TiCN+Al <sub>2</sub> O <sub>3</sub> +TiN	Thick coating	14.8	1,670	16.4	10.0	3,000
CA4115	Gold	Micro columnar TiCN+Al <sub>2</sub> O <sub>3</sub> +TiN	Thick coating	14.7	1,550	15.2	12.0	2,750
CA4120	Gold	Micro columnar TiCN+Al <sub>2</sub> O <sub>3</sub> +TiN	Thick coating	14.7	1,550	15.2	12.0	2,750
CA4505	Blackish gray	Micro columnar TiCN+Al <sub>2</sub> O <sub>3</sub>	Thick coating	14.9	1,780	17.4	9.5	2,350
CA4515	Blackish gray	Micro columnar TiCN+Al <sub>2</sub> O <sub>3</sub>	Thick coating	14.9	1,570	15.4	12.0	2,780
CA510	Gold	Micro columnar TiCN+Al <sub>2</sub> O <sub>3</sub> +TiN	Thick coating	14.5	1,470	14.4	11.5	2,500
CA515	Gold	Micro columnar TiCN+Al <sub>2</sub> O <sub>3</sub> +TiN	Thick coating	14.4	1,440	14.1	12.5	2,650
CA525	Gold	Micro columnar TiCN+Al <sub>2</sub> O <sub>3</sub> +TiN	Thick coating	14.2	1,360	13.3	13.5	2,750
CA530	Gold	Micro columnar TiCN+Al <sub>2</sub> O <sub>3</sub> +TiN	Thick coating	13.9	1,340	13.1	14.5	2,850
CA5505	Gold	Micro columnar TiCN+Al <sub>2</sub> O <sub>3</sub> +TiN	Thick coating	14.7	1,730	17.0	10.0	2,540
CA5515	Gold	Micro columnar TiCN+Al <sub>2</sub> O <sub>3</sub> +TiN	Thick coating	14.7	1,550	15.2	12.0	2,750
CA5525	Gold	Micro columnar TiCN+Al <sub>2</sub> O <sub>3</sub> +TiN	Thick coating	14.5	1,400	13.7	12.0	2,780
CA5535	Gold	Micro columnar TiCN+Al <sub>2</sub> O <sub>3</sub> +TiN	Thick coating	14.1	1,340	13.1	16.5	2,970
CA6515	Gold	Micro columnar TiCN+Al <sub>2</sub> O <sub>3</sub> +TiN	Thin coating	14.7	1,530	15.0	12.0	2,780
CA6525	Gold	Micro columnar TiCN+Al <sub>2</sub> O <sub>3</sub> +TiN	Thin coating	14.7	1,370	13.4	16.0	3,100
CA6535	Gold	Micro columnar TiCN+Al <sub>2</sub> O <sub>3</sub> +TiN	Thin coating	14.3	1,320	12.9	16.0	3,700
CR9025	Gold	Columnar TiCN+TiN	Thick coating	14.5	1,400	13.7	12.0	2,780
PVD Coated Carbide								
PR630	Gold	TiN	Thin coating	12.5	1,500	14.7	11.0	2,160
PR660	Gold	TiN	Thin coating	13.7	1,450	14.2	12.0	2,250
PR730	Gold	TiAlN+TiN	Thin coating	13.7	1,450	14.2	12.0	2,250
PR830	Gold	TiAlN+TiN	Thin coating	13.7	1,450	14.2	12.0	2,250
PR905	Bluish violet	TiAlN	Thin coating	14.8	1,670	16.4	10.0	3,000
PR915	Bluish violet	TiAlN	Thin coating	14.1	1,700	16.7	11.0	4,140
PR930	Reddish gray	TiCN	Thin coating	14.1	1,700	16.7	11.0	4,140
PR1005	Reddish gray	TiCN	Thin coating	14.9	1,800	17.6	10.0	3,300
PR1025	Reddish gray	TiCN	Thin coating	14.5	1,600	15.8	13.0	3,400
PR1115	Purple red	TiAlN	Thin coating	14.7	1,700	16.7	11.0	3,000
PR1125	Purple red	TiAlN	Thin coating	14.5	1,600	15.8	13.0	3,400
PR1210	Blackish red	MEGACOAT	Thin coating	14.8	1,670	16.4	10.0	3,000
PR1215	Blackish red	MEGACOAT	Thin coating	14.7	1,700	16.7	11.0	3,000
PR1225	Blackish red	MEGACOAT	Thin coating	14.5	1,600	15.8	13.0	3,400
PR1230	Blackish red	MEGACOAT	Thin coating	13.7	1,450	14.2	12.0	2,250
PR1305	Blackish red	MEGACOAT	Thin coating	15.0	1,790	17.5	9.5	2,350
PR1310	Blackish red	MEGACOAT	Thin coating	14.8	1,670	16.4	10.0	3,000
PR1325	Blackish red	MEGACOAT	Thin coating	14.7	1,370	13.4	16.0	3,100
PR1425	Blackish red	MEGACOAT	Thin coating	14.5	1,600	15.8	13.0	3,400
PR1510	Blackish red	MEGACOAT	Thin coating	14.8	1,720	16.8	9.0	2,450
PR1525	Blackish red	MEGACOAT	Thin coating	14.5	1,600	15.8	13.0	3,400
Carbide								
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	16.7	11.0	3,000
GW25	Gray	WC+Co	-	14.5	1,600	15.8	13.0	3,400
SW05	Gray	WC+Co	-	15.0	1,790	17.5	9.5	2,350
SW10	Gray	WC+Co	-	14.8	1,670	16.4	10.0	3,000
SW25	Gray	WC+Co	-	14.7	1,370	13.4	16.0	3,100

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