

GRADES COMPARISON TABLE

CEMENTED CARBIDE

Classification	ISO	Mitsubishi Materials	Sandvik	Kennametal	Seco Tools	Iscar	Sumitomo Electric	Tungaloy	Kyocera	Dijet	Hitachi Tool	
	Symbol											
Turning	P	P01										
		P10				IC70	ST10P	TX10S		SRT	WS10	
		P20	UTi20T	SMA			IC70 IC50M	ST20E	UX30		SRT DX30	EX35
		P30	UTi20T	SM30			IC50M IC54	A30	UX30	PW30	SR30 DX30	EX35
		P40					IC54	ST40E			SR30	EX45
	M	M10		H10A	KU10 K313 K68	890	IC07	EH510 U10E			UMN	WA10B
		M20	UTi20T	H13A	KU10 K313 K68	HX	IC07 IC08 IC20	EH520 U2	UX30		DX25 UMS	EX35
		M30	UTi20T	H10F SM30		883	IC08 IC20 IC28	A30	UX30		DX25 UMS	EX45
		M40					IC28				UM40	EX45
	K	K01	HTi05T		KU10 K313 K68			H1 H2	TH03 KS05F		KG03	WH05
		K10	HTi10	H10 HM	KU10 K313 K68	890	IC20	EH10 EH510	TH10	KW10 GW15	KG10 KT9	WH10
		K20	UTi20T	H13A	KU10 K313 K68	HX	IC20	G10E EH20 EH520	KS15F KS20	GW25	CR1 KG20	WH20
		K30	UTi20T			883		G10E			KG30	
	N	N01		H10 H13A				H1 H2	KS05F	KW10		
		N10	HTi10		KU10 K313 K68	H15	IC08 IC20	EH10 EH510	TH10	KW10 GW15	KT9	WH10
		N20			KU10 K313 K68	HX	IC08 IC20	G10E EH20 EH520	KS15F		CR1	WH20
		N30				H25						
	S	S01	RT9005							SW05	KG03	
		S10	RT9005 RT9010 MT9015	H10 H10A H10F H13A	K10 K313 K68	HX	IC07 IC08	EH10 EH510	KS05F TH10	SW10	FZ05 KG10	
		S20	RT9010 TF15		K10 K313 K68	H25	IC07 IC08	EH20 EH520	KS15F KS20	SW25	FZ15 KG20	
S30		TF15								KG30		
Milling	P	P10								SRT		
		P20	UTi20T		K125M		IC50M IC28	A30N	UX30		SRT DX30	EX35
		P30	UTi20T		GX		IC50M IC28	A30N	UX30	PW30	SR30 DX30	EX35
		P40					IC28			PW30	SR30	EX45
	M	M10									UMN	
		M20	UTi20T				IC08 IC20	A30N	UX30		DX25 UMS	EX35
		M30	UTi20T	SM30			IC08 IC28	A30N	UX30		DX25 UMS	EX45
		M40					IC28					EX45
	K	K01	HTi05T		K115M, K313						KG03	
		K10	HTi10		K115M K313		IC20	G10E	TH10	KW10 GW25	KG10	WH10
		K20	UTi20T	H13A		HX	IC20	G10E	KS20	GW25	KT9 CR1 KG20	WH20
		K30	UTi20T								KG30	

(Note) The above table is selected from a publication. We have not obtained approval from each company.

MICRO GRAIN

	ISO	Mitsubishi	Sandvik	Kennametal	Seco	Sumitomo	Tungaloy	Kyocera	Dijet	Hitachi	
	Classification	Symbol	Materials		Tools	Electric				Tool	
Cutting Tools	Z	Z01	SF10 MF07 MF10	PN90 6UF,H3F 8UF,H6F			F0	F MD05F MD1508		FZ05 FB05 FB10	NM08
		Z10	HTi10 MF20	H10F		890	XF1 F1 AFU	MD10 MD0508 MD07F	FW30	FZ10 FZ15 FB15	NM15
		Z20	TF15 MF30	H15F		890 883	AF0 SF2 AF1			FZ15 FB15 FB20	BRM20 EF20N
		Z30				883	A1 CC			FZ20 FB20	NM25

CERMET

	ISO	Mitsubishi	Sandvik	Kennametal	Seco	Iscar	Sumitomo	Tungaloy	Kyocera	Dijet	Hitachi		
	Classification	Symbol	Materials		Tools		Electric				Tool		
Turning	P	P01	AP25N* VP25N*				IC20N IC520N*	T110A T1000A	NS520 AT520* GT520* GT720*	TN30 PV30* TN6010 PV7010*	LN10 CX50		
		P10	NX2525 AP25N* VP25N*	CT5015 GC1525*	KT315 KT125	TP1020 TP1030* CM CMP*	IC20N IC520N* IC530N*	T1200A T2000Z* T1500A T1500Z*	NS520 NS730 GT730* NS9530 GT9530	TN60 PV60* TN6010 PV7010*	CX50 CX75 PX75*	CZ25*	
		P20	NX2525 AP25N* VP25N* NX3035 MP3025*	GC1525*	KT325 KT1120 KT5020*	TP1020 TP1030*	IC20N IC520N* IC30N IC530N* IC75T	T1200A T2000Z* T3000Z* T1500A T1500Z*	NS530 NS730 GT730* NS9530 GT9530	TN60 PV60* TN6020 PV7020* NS9530 PV7025*	CX75 TN6020 PV7020* PV7025*	CX75* PX90*	CH550
		P30	MP3025* VP45N*				IC75T	T3000Z*		PV7025* PV90*	PX90*		
	M	M10	NX2525 AP25N* VP25N*	GC1525*	KT125	TP1020 TP1030* CM CMP*		T110A T1000A T2000Z* T1500Z*	NS520 AT530* GT530* GT720*	TN60 PV60* TN6020 PV7020*	LN10 CX50		
		M20	NX2525 AP25N* VP25N*					T1200A T2000Z* T1500A T1500Z*	NS530 GT730* NS730	TN90 TN6020 PV90* PV7020* PV7025*	CX50 CX75	CH550	
		M30											
	K	K01	NX2525 AP25N*					T110A T1000A T2000Z* T1500Z*	NS710 NS520 AT520* GT520* GT720*	TN30 PV30* PV7005* TN6010 PV7010*	LN10		
		K10	NX2525 AP25N*	CT5015	KT325 KT125			T1200A T2000Z* T1500A T1500Z*	NS520 GT730* NS730	TN60 PV60* TN6020 PV7020* PV7025*	LN10		
		K20	NX2525 AP25N*					T3000Z*			CX75		
	Milling	P	P10	NX2525			C15M	IC30N			TN60	CX75	MZ1000*
			P20	NX2525	CT530	KT530M HT7 KT605M	C15M MP1020	IC30N	T250A	NS530	TN100M TN60	CX75 CX90	CH550 CH7030 MZ1000* MZ2000*
P30			NX4545				IC30N	T250A T4500A	NS530 NS540 NS740		CX90 CX99	MZ3000* CH7035	
M		M10	NX2525				IC30N			TN60			CH550 CH7030 MZ1000* MZ2000*
		M20	NX2525	CT530	KT530M HT7 KT605M	C15M	IC30N		NS530	TN100M	CX75		CH550 CH7030 MZ1000* MZ2000*
		M30	NX4545					T250A	NS540 NS740		CX90 CX99	MZ3000* CH7035	
K		K01											
		K10	NX2525						NS530	TN60			
		K20	NX2525		KT530M HT7						CX75		

*Coated Cermet

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GRADES COMPARISON TABLE

CVD COATED GRADE

Classification	ISO	Mitsubishi Materials	Sandvik	Kennametal	Seco Tools	Iscar	Sumitomo Electric	Tungaloy	Kyocera	Dijet	Hitachi Tool		
	Symbol												
Turning	P	P01	UE6105	GC4205 GC4005	KCP05 KC9105	TP0500 TP1500	IC9150 IC8150 IC428	AC810P AC700G	T9105 T9005	CA510 CA5505	JC110V	HG8010	
		P10	UE6105 UE6110 MY5015	GC4215 GC4015 GC4325	KCP10 KCP25 KC9110	TP1500 TP2500	IC9150 IC9015 IC8150 IC8250	AC810P AC700G AC2000 AC820P	T9105 T9005 T9115	CA510 CA5505 CA5515 CA515	JC110V JC215V	HG8010 HG8025 GM8020	
		P20	UE6110 UE6020 MC6025 MY5015	GC4215 GC4225 GC4015 GC4025 GC4225	KCP25 KC9125	TP2500	IC9015 IC8250 IC9025 IC9250 IC8350	AC2000 AC820P AC830P	T9115 T9125	CA515 CA5515 CA5525 CR9025 CA525	JC110V JC215V	HG8025 GM8020 GM25	
		P30	MC6025 UE6020 UE6035 UH6400	GC4225 GC4325 GC4235 GC4025 GC4035	KCP30 KCP40 KC8050	TP3500 TP3000	IC8350 IC9250 IC9350	AC830P AC630M	T9125 T9035 T9135	CA525 CA5525 CA5535 CR9025 CA530	JC215V JC325V	GM25 GM8035	
		P40	UE6035 UH6400	GC4235 GC4035	KCP30 KCP40 KC9140 KC9040 KC9240 KC9245	TP3500 TP3000	IC9350	AC630M	T9135 T9035	CA530 CA5535	JC325V JC450V	GM8035 GX30	
	M	M10	US7020 MC7015	GC2015	KCM15	TM2000	IC9250 IC6015 IC8250	AC610M	T9115	CA6515	JC110V		
		M20	US7020 MC7015 MC7025	GC2015	KCM15 KC9225	TM2000	IC9250 IC6015 IC9025 IC656	AC610M AC630M	T6020 T9125	CA6515 CA6525	JC110V	HG8025 GM25	
		M30	US735 MC7025	GC2025	KCM25 KC9230	TM4000	IC9350 IC6025 IC635	AC630M	T6030	CA6525		GM8035 GX30	
		M40	US735	GC2025	KCM35 KC9240 KC9245	TM4000	IC6025 IC9350	AC630M				GX30	
	K	K01	MC5005 UC5105	GC3205 GC3210	KCK05	TH1500 TK1001 TK1000	IC5005 IC9007	AC405K AC410K	T5105	CA4505 CA4010	JC050W JC105V	HX3505 HG3305	
		K10	MC5015 UC5115 MY5015	GC3205 GC3210 GC3215	KCK15 KCK20 KC9315	TK1001 TK1000 TK2000 TK2001	IC5005 IC5010 IC9150 IC428 IC4028	AC405K AC410K AC420K AC700G AC415K	T5115	CA4515 CA4010 CA4115	JC050W JC105V JC110V	HX3515 HG3315 HG8010	
		K20	MC5015 UC5115 UE6110 MY5015	GC3215	KCK20 KC9110 KC9325	TK2001 TK2000	IC5010 IC8150 IC9150 IC9015 IC418	AC415K AC420K AC700G AC820P	T5115 T5125	CA4515 CA4115 CA4120	JC110V JC215V	HG8025 GM8020	
		K30	UE6110		KC9125 KC9325		IC9015 IC418	AC820P	T5125		JC215	HG8025 GM8020	
	S	S01	US905	S05F						CA6515 CA6525			
	Milling	P	P10			MP1500	IC9080 IC4100 IC9015				JC730U		
			P20	F7030	GC4220		MP1500 MP2500	IC5100 IC520M	ACP100	T3130		JC730U	GX2140
			P30	F7030	GC4230	KC930M	MP2500	IC4050	ACP100	T3130			GX2140 GX2160
			P40		GC4240	KC935M KC530M							GX2030 GX30 GX2160
		M	M10					IC9250					
			M20	MP7130 F7030		KC925M	MP2500	IC520M IC9350	ACP100	T3130		JC730U	GX2140
M30			MP7130 F7030	GC2040	KC930M	MP2500	IC9350 IC4050	ACP100	T3130			GX2140 GX2160 GX30	
M40					KC930M KC935M		IC635					GX2030 GX2160 GX30	
K		K01									JC600		
		K10	MC5020					ACK100	T1115 T1015		JC600		
		K20	MC5020	GC3220 K20W	KC915M	MK1500 MK2000	IC5100 IC9150	ACK200	T1115 T1015		JC610		
		K30		GC3040	KC920M KC925M KC930M KC935M	MK2000 MK3000	IC4100 IC4050 IC520M				JC610	GX30	

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PVD COATED GRADE

Classification	ISO	Mitsubishi	Sandvik	Kennametal	Seco	Iscar	Sumitomo	Tungaloy	Kyocera	Dijet	Hitachi	
	Symbol	Materials			Tools		Electric				Tool	
Turning	P	P01							PR915 PR1005			
		P10	VP10MF	GC1525 GC1025	KC5010 KC5510 KU10T	CP200 TS2000	IC250 IC350 IC507 IC570 IC807 IC907 IC908		AH710	PR915 PR1005 PR930 PR1025 PR1115 PR1225 PR1425		
		P20	VP10RT VP20RT VP15TF VP20MF	GC1525 GC1025 GC1125	KC5025 KC5525 KC7215 KC7315 KU25T	CP250 TS2500	IC228 IC250 IC308 IC328 IC350 IC354 IC507 IC528 IC570 IC807 IC808 IC907 IC908 IC928 IC1008 IC1028 IC3028		AH710 AH725 AH120 SH730 GH730 GH130	PR930 PR1025 PR1115 PR1225	IP2000	
		P30	VP10RT VP20RT VP15TF VP20MF	GC1025 GC1125	KC7015 KC7020 KU25T KC7235	CP500	IC228 IC250 IC328 IC330 IC354 IC528 IC1008 IC1028 IC3028		AH725 AH120 SH730 GH730 GH130 AH740 J740			IP3000
		P40			KC7040 KC7140 KC7030	CP500	IC228 IC328 IC330 IC528 IC1008 IC1028 IC3028		AH740 J740			
		M	M01									
	M10	VP10MF	GC1005 GC1025 GC1125 GC1105	KC5010 KC5510 KC6005 KC6015	CP200 TS2000	IC330 IC354 IC507 IC520 IC570 IC807 IC907 IC3028		AH710	PR915 PR1025 PR1225 PR1425	JC5003 JC8015	IP050S	
	M20	VP10RT VP20RT VP15TF VP20MF	GC1005 GC1025 GC1125 GC1105	KC5025 KC5525 KC7020 KC7025	CP250 TS2500 CP500	IC250 IC330 IC354 IC808 IC908 IC1008 IC1028 IC3028	AC520U	AH710 AH725 AH120 SH730 GH730 GH130 GH330 AH630	PR1025 PR1125 PR1225 PR915 PR930	JC5003 JC5015 JC8015	IP100S	
	M30	VP10RT VP20RT VP15TF VP20MF MP7035	GC1125 GC2035	KC7030 KC7225	CP500	IC228 IC250 IC328 IC330 IC1008 IC1028 IC3028	AC520U AC530U	GH330 AH725 AH120 SH730 GH730 GH130 J740 AH645	PR1125	JC5015 JC8015		
	M40	MP7035	GC2035			IC328 IC928 IC1008 IC1028 IC3028	AC530U	J740				
	K	K01										
		K10			KC5010 KC7210	CP200 TS2000	IC350 IC1008	AC510U	GH110 AH110 AH710	PR905		
		K20	VP10RT VP20RT VP15TF		KC7015 KC7215 KC7315	CP200 CP250 TS2000 TS2500	IC228 IC350 IC808 IC908 IC1008		GH110 AH110 AH710 AH725 AH120 GH730 GH130	PR905		
		K30	VP10RT VP20RT VP15TF		KC7225	CP500	IC228 IC350 IC808 IC908 IC1008		AH725 AH120 GH730 GH130			
	S	S01	MP9005 VP05RT				IC507 IC907		AH905		JC5003 JC8015	
		S10	MP9005 MP9015 VP10RT	GC1105 GC1005 GC1025	KC5010 KC5410 KC5510	CP200 CP250 TS2000 TS2500	IC507 IC903	AC510U	AH905 SH730 AH110 AH120		JC5003 JC5015 JC8015	
		S20	MP9015 MT9015 VP20RT	GC1025 GC1125	KC5025 KC5525	CP250 TS2500 CP500	IC300 IC808 IC908 IC928 IC3028 IC806	AC510U AC520U	AH120 AH725	PR1125	JC5015 JC8015	
		S30	VP15TF	GC1125				AC520U	AH725	PR1125		
	Milling	P	P01								JC5003	ATH80D PTH08M PCA08M PCS08M
			P10		GC1010 GC1025	KC715M		IC250 IC350 IC808 IC810 IC900 IC903 IC908 IC910 IC950	ACP200		PR730 PR830 PR1025 PR1225	JC5003 JC5030 JC8015 JC5015 JC5118
P20			MP6120 VP15TF	GC1025 GC1010 GC2030	KC522M KC525M	F25M MP3000	IC250 IC300 IC328 IC330 IC350 IC528 IC808 IC810 IC830 IC900 IC908 IC910 IC928 IC950 IC1008	ACP200	AH725 AH120 GH330 AH330	PR730 PR830 PR1025 PR1225 PR1230 PR1525	JC5015 JC5030 JC5040 JC6235 JC8015 JC5118 JC6235	CY150 CY15 JX1015

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GRADES COMPARISON TABLE

Classification	ISO	Mitsubishi Materials	Sandvik	Kennametal	Seco Tools	Iscar	Sumitomo Electric	Tungaloy	Kyocera	Dijet	Hitachi Tool	
	Symbol											
Milling	P	P30	MP6120 VP15TF MP6130 VP30RT	GC1010 GC1030 GC2030	KC725M KC530M	F25M MP3000 F30M	IC250 IC300 IC328 IC330 IC350 IC528 IC830 IC900 IC928 IC950 IC1008	ACP200 ACP300	AH725 AH120 AH130 AH140 GH130 AH730	PR660 PR1230	JC5015 JC5040 JC8015 JC5118	JS4045 JS4060 CY250 CY25 HC844 JX1045 PTH30E
		P40	VP30RT	GC1030	KC735M	F40M T60M		ACP300	AH140		JC5040 JC5118	JS4060 PTH40H JX1060 GF30 GX30
	M	M01										PCS08M
		M10		GC1025 GC1030	KC715M		IC903			PR730 PR1025 PR1225	JC5118	CY9020 JX1020
		M20	VP15TF MP7130 MP7030 VP20RT	GC1025 GC1030 GC1040 GC2030	KC730 KC522M KC525M	F25M MP3000	IC250 IC300 IC808 IC830 IC900 IC908 IC928 IC1008	ACP200	AH725 AH120 GH330 AH330 GH110	PR730 PR660 PR1025 PR1225	JC5015 JC5040 JC5118 JC8015	CY150 CY15 JX1015
		M30	VP15TF MP7130 MP7030 VP20RT MP7140 VP30RT	GC1040 GC2030	KC725M KC735M	F30M F40M MP3000	IC250 IC300 IC328 IC330 IC830 IC928 IC1008	ACP200 ACP300	AH120 AH725 AH130 AH140 GH130 AH730 GH340	PR660 PR1510	JC5015 JC8015 JC8050 JC5118	CY250 CY25 HC844 JM4060 JX1045
		M40	MP7140 VP30RT			F40M		ACP300	AH140		JC5015 JC5118 JC8050	JX1060 GF30 GX30
	K	K01	MP8010						AH110 GH110 AH330		JC5003	ATH80D PTH08M PCA08M PCS08M
		K10	MP8010	GC1010	KC510M		IC350 IC810 IC830 IC900 IC910 IC928 IC950 IC1008		AH110 GH110 AH725 AH120 GH130 AH330	PR1210 PR905	JC5003 JC8015	ASC05E JX1005 JX1020 CY9020 CY100H CY10H
		K20	VP15TF VP20RT	GC1010 GC1020	KC520M KC525M	MK2000	IC350 IC808 IC810 IC830 IC900 IC908 IC910 IC928 IC950 IC1008	ACK300	GH130	PR1210 PR905	JC5015 JC5080 JC8015 JC6235	CY150 CY15 PTH13S JX1015
		K30	VP15TF VP20RT	GC1020	KC725M KC735M		IC350 IC808 IC830 IC908 IC928 IC950 IC1008	ACK300			JC5015 JC8015 JC5080	CY250 GX2030 GX30 CY25 PTH40H PTH30E JX1045
	S	S01								PR905	JC5003 JC8015 JC5118	
		S10	MP9120 VP15TF	C1025	KC510M		IC903	EH520Z EH20Z		PR905	JC5003 JC5015 JC8015 JC5118	PCS08M PTH13S JS1025
		S20	MP9120 VP15TF MP9130 MP9030	GC1025 GC2030 S30T	KC522M KC525M		IC300 IC908 IC808 IC900 IC830 IC928 IC328 IC330	EH520Z EH20Z ACK300 ACP300		PR905	JC8015 JC5015 JC8050 JC5118	CY100H CY10H
		S30		GC2030	KC725M	F40M	IC830 IC928	ACP300			JC8050 JC5118	
	H	H01	MP8010 VP05HT				IC903				JC8003 JC8008	
		H10	VP15TF VP10H	GC1010 GC1030	KC635M	MH1000 F15M	IC900				JC8003 JC8008 JC8015 JC5118	BH200 BH250
		H20	VP15TF	GC1010 GC1030	KC635M	F15M	IC900 IC808 IC908 IC1008				JC8015 JC5118	ATH80D PTH08M PCA08M JP4005 JX1005
		H30			KC530M	MP3000 F30M	IC808 IC908 IC1008					

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CBN

Classification	ISO	Mitsubishi Materials	Sandvik	Seco Tools	Sumitomo Electric	Tungaloy	Kyocera	Dijet	
	Symbol								
Turning	H	H01	MBC010 MB810		CBN060K	BNC100 BNX10 BN1000	BXM10 BX310	KBN050M KBN10M KBN510	
		H10	MBC020 BC8020 MB825 MB8025	CB7015	CBN010	BNC160 BNX20 BN2000	BXM20 BX330	KBN25M KBN525	JBN300
		H20	MBC020 BC8020 MB8025	CB7025 CB20	CBN150 CBN160C	BNC200 BNX25 BN250	BXM20 BX360	KBN30M	JBN245
		H30	BC8020 MB835	CB7525	CBN150 CBN160C	BNC300 BN350	BXC50 BX380	KBN35M	
	S	S01	MB730		CBN170	BN700 BN7000	BX950		
		S10							
		S20							
		S30							
	K	K01	MB710 MB5015			BN500 BNC500	BX930 BX910		
		K10	MB730 MB4020	CB7525		BN700 BN7500 BN7000	BX850	KBN60M	JBN795
		K20	MB730 MB4020		CBN200	BN700 BN7000	BX950	KBN60M	JBN500
		K30	BC5030 MBS140	CB7925	CBN300 CBN400C CBN500	BNS800	BX90S BXC90	KBN900	
		Sintered Alloy	MB4020 MB835		CBN200	BN7500 BN7000	BX450 BX470 BX480	KBN65B KBN570 KBN65M KBN70M	

PCD

Classification	ISO	Mitsubishi Materials	Sandvik	Seco Tools	Sumitomo Electric	Tungaloy	Kyocera	Dijet	
	Symbol								
Turning	N	N01	MD205	CD05	PCD05	DA90	DX180 DX160	KPD001	JDA30 JDA735
		N10	MD220	CD10	PCD10	DA150	DX140	KPD010	
		N20	MD220		PCD20	DA2200	DX120		JDA715
		N30	MD230		PCD30 PCD30M	DA1000	DX110	KPD230	JDA10

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