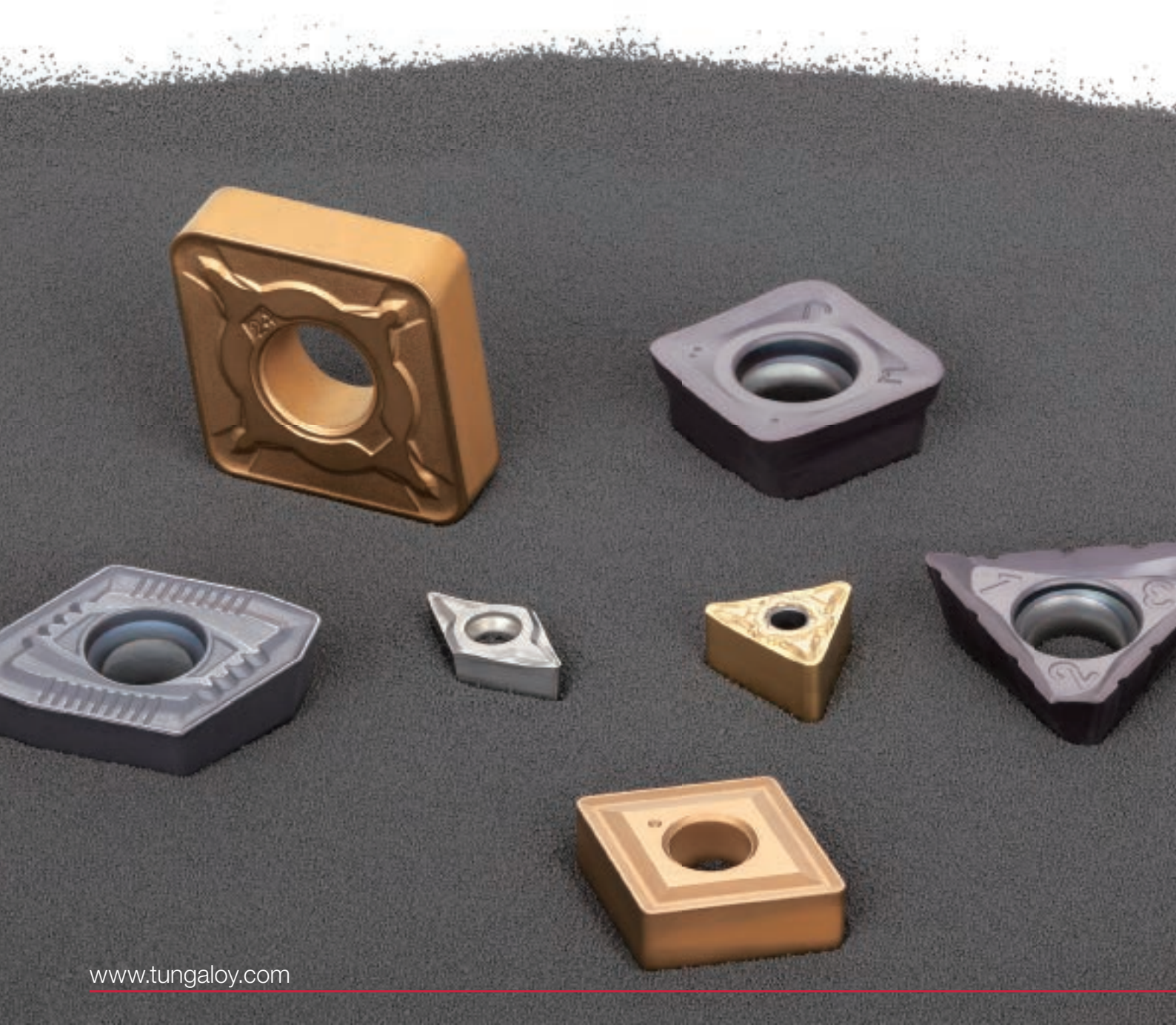
Grade



GRADE

CVD - Coated Grade

Grade	Coating		Application	Feature	Turning	Grooving	Milling	Drilling
	Main composition	Thickness / µm						
T9105 P01 - P10 K10 - K20	TiCN-Al_2O_3	16	P K	- Good wear resistance - Excellent performance in high-speed cutting	■			
T9115 P10 - P20 K15 - K30	TiCN-Al_2O_3	16	P K	- Well-balanced between wear and chipping resistance - Suitable for a wide range of turning applications	■			
T9125 P20 - P30	TiCN-Al_2O_3	16	P	- High chipping resistance in light to medium interrupted cutting - First choice for machining steel	■	■		
T9135 P30 - P40	TiCN-Al_2O_3	16	P	- Excellent fracture resistance in heavy interrupted cutting	■			
T6120 P10 - P20 M10 - M20	TiCN	6	P M	- Good wear resistance in continuous cutting at high speed	■			
T6130 P15 - P30 M15 - M30	TiCN	6	P M	- High wear resistance in cutting at medium to high speed - First choice for machining stainless steel	■			
T515 K10 - K20	TiCN-Al_2O_3	16	K	- Good wear resistance even in high-speed machining - First choice for roughing cast iron	■			
T5105 K05 - K15	TiCN-Al_2O_3	16	K	- High resistance to wear and plastic deformation in continuous cutting at high speed	■			
T5115 K10 - K20	TiCN-Al_2O_3	16	K	- Stable machining in a wide range of applications from continuous to interrupted cutting	■			
T5125 K15 - K30	TiCN-Al_2O_3	16	K	- Strong resistance to sudden fracture - Ideal for heavy interrupted machining	■			
T313V -	TiCN-Al_2O_3	3	Threading	- Good resistance to plastic deformation - Designed for threading	■			
T3225 P20 - P35 M20 - M35	TiCN-Al_2O_3	10	P M	- High chipping and fracture resistance - Suitable for machining steel and stainless steel			■	
T3130 P20 - P40 M20 - M40	TiCN-Al_2O_3	6	P M	- Good balance between wear and chipping resistance - Ideal for machining steel and stainless steel			■	
T1215 K10 - K25	TiCN-Al_2O_3	10	K	- Good balance between wear and chipping resistance - Designed for machining cast iron			■	
T1115 K10 - K25	TiCN-Al_2O_3	11	K	- High wear resistance - Ideal for machining cast iron			■	

PVD - Coated Grade

Grade	Coating: Main composition	Coating: Thickness / μm	Application	Feature	Turning	Grooving	Milling	Drilling
AH110 P05 - P15 M05 - M15 K10 - K25 S05 - S15	(Ti, Al)N	3	P M K S	- High wear resistance - Suitable for finishing steel, cast iron, and high-hardened material	■		■	
AH120 P15 - P25 M15 - M25 K15 - K30 S10 - S25	(Ti, Al)N	3	P M K S	- Good balance between wear and fracture resistance - Suitable for machining steel, stainless steel, and cast iron under general cutting conditions	■	■	■	■
AH130 P25 - P40 M25 - M40	(Ti, Al)N	3	P M	- High chipping and fracture resistance - Designed for machining austenitic stainless steel under general cutting conditions			■	
AH140 M30 - M45	(Ti, Al)N	3	M	- High fracture resistance - Suitable for machining stainless steel			■	
AH170 P20 - P35 M20 - M35 K15 - K30	(Ti, Al)N	3	P M K	- High wear resistance - Suitable for steel and cast iron drilling				■
AH180 P20 - P35 M20 - M35 K15 - K30	(Ti, Al)N	3	P M K	- High wear resistance - Suitable for steel and cast iron, stainless drilling				■
AH330 P15 - P30	(Ti, Al)N	3	P	- Excellent wear resistance	■		■	
AH630 P15 - P30 M15 - M30	(Ti, Al)N	5	P M	- Good resistance to wear and fracture in machining stainless steel at low to medium cutting speed	■			
AH645 P30 - P40 M30 - M40	(Ti, Al)N	5	P M	- High fracture resistance in machining stainless steel	■			
AH710 P05 - P15 K05 - K15 H05 - H15	(Ti, Al)N	3	P K H	- High wear resistance - Ideal for finishing cast iron and high-hardened material	■	■	■	
AH725 P15 - P30 M15 - M30 K25 - K30 S15 - S25	(Ti, Al)N	2	P M K S	- Good balance between wear and chipping resistance - Suitable for machining steel and stainless steel under general cutting conditions	■	■	■	■
AH7025 P20 - P30 M20 - M30 S15 - S25	(Ti, Al)N	3.5	P M K	- Excellent wear resistance and high rigidity - First choice for grooving of various materials		■		
AH730 P15 - P30	(Ti, Al)N	3	P	- Well-balanced between wear and fracture resistance	■		■	
AH740 P25 - P40	(Ti, Al)N	3	P	- Excellent chipping resistance in machining steel				■
AH750 H15 - H30	(Ti, Al)N	3	H	- High wear resistance - Suitable for hard material machining			■	
AH8005 M01 - M10 S01 - S10	(Al,Ti)N	3.5	M S	- Good balance between wear and fracture resistance - First choice for machining heat-resistant alloys under general cutting conditions	■			
AH8015 M10 - M20 S10 - S20	(Al,Ti)N	3.5	M S	- Strong resistance to wear and built-up edge	■			
AH905 S01 - S10	(Al, Ti)N	1.5	S	- Strong resistance to wear and built-up edge	■	■		

PVD - Coated Grade

Grade	Coating: Main composition	Coating: Thickness / µm	Application	Feature	Turning	Grooving	Milling	Drilling
AH3035 P20 - P45 H20 - H30	(Ti, Al)N	5	P H	- Good balance between wear and chipping resistance - Suitable for machining high-hardened material at high feed			■	
AH3135 P30 - P40 M30 - M40	(Ti, Al)N	4	P M	- High fracture resistance - Ideal for machining steel and stainless steel under general cutting conditions			■	
AH4035 M30 - M45	(Ti, Al)N	5	M	- Good balance for wear and fracture resistance - Suitable for difficult stainless steel machining			■	
AH6030 M25 - M35 S15 - S30	(Ti, Al)N	5	M S	- High fracture resistance - Ideal for drilling stainless steel and heat-resistant alloys under general cutting conditions				■
AH9030 P15 - 35 K10 - 25	(Ti, Al)N	5	P K	- High wear resistance - Designed for drilling steel and cast iron at high speed				■
SH725 P20 - P30 M20 - M30	(Ti, Al)N	2	P M	- Excellent wear resistance - Suitable for machining steel and stainless steel	■	■		
SH730 P20 - P35 M20 - M35 S05 - S15	(Ti, Al)N	1	P M S	- High wear resistance - Suitable for machining steel, stainless steel, and difficult-to-cut materials	■	■		
GH110 K10 - K25 N05 - N15	Ti(C, N, O)	3	K N	- Good wear resistance	■		■	
GH130 P25 - P40 M25 - M40 K25 - K40	Ti(C, N, O)	3	P M K	- High chipping and fracture resistance - Suitable for machining steel, stainless steel and cast iron		■	■	■
GH330 P15 - P30 M15 - M30 K05 - K30	Ti(C, N, O)	3	P M K	- Strong resistance to wear and fracture - Suitable for continuous to medium interrupted cutting	■	■	■	
GH730 P20 - P35 M20 - M35 K20 - K30	Ti(C, N, O)	3	P M K	- High wear resistance - Ideal for turning and grooving at low speed	■	■		
J740 -	TiN	1	For small lathes	- Ultra-fine-grain cemented carbide coated with TiN-based compound	■	■		
YH170 P20 - P35 M20 - M35	Ti(C, N)	1.5	P M	- Strong resistance to wear and fracture - Suitable for steel and stainless drilling				■
YH180 P20 - P35 M20 - M35	Ti(C, N)	1.5	P M	- High wear resistance - Suitable for steel and stainless drilling				■
JM10 P20 - P35 M20 - M35	TiN	1	P M	- High wear resistance - Suitable for steel and stainless drilling				■
DS1100 N05 - N20	DLC coating	Thin layer	N	- High wear resistance - Designed for finishing aluminium			■	
DS1200 N10 - N25	DLC coating	Thin layer	N	- Good balance between wear and chipping resistance - Ideal for semi-finishing to finishing of aluminium			■	

Ceramic

Grade	Specific gravity	Hard-ness (HRA)	T.R.S. (GPa)	Application	Feature	Turning	Grooving	Milling	Drilling
LX11	4.35	94.0	0.9	H	- Alumina base - Suitable for continuous cutting of high-hardened materials	■			
LX21	4.24	94.0	0.8	K	- Alumina base - Excellent chipping resistance in continuous cutting of cast iron	■			
FX105	3.24	93.0	1.3	K	- Silicon nitride base - Suitable for high-speed machining of cast iron	■		■	
CX710	3.20	92.9	1.1	K	- Silicon nitride base - Excellent performance in high-speed machining of cast iron	■			

Cermet

Grade	Coating		Application	Feature	Turning	Grooving	Milling	Drilling
	Main composition	Thickness / µm						
GT9530	Ti(C, N, O)	3	P K	- High wear resistance - Ideal for finishing with high surface quality	■			
J9530	TiN	1	For small lathes	- Suitable for small-part machining	■	■		
NS9530	Uncoated	-	P K	- High fracture resistance - Suitable for finishing to medium cutting of steel	■	■		
NS740	Uncoated	-	P	- Good resistance to fracture and thermal crack - Ideal for milling operations that require high rigidity			■	
NS520	Uncoated	-	P K	- Good wear resistance	■			
GT720	Ti(C, N, O)	3	P K	- Good wear resistance in high speed machining	■			
X407	Uncoated	-	P	- Good wear resistance for finish on dry machining	■		■	
N308	Uncoated	-	P	- Good wear resistance			■	

CBN (T-CBN)

Grade	Hardness (Hv)	T.R.S. (GPa)	Application	Feature	Turning	Grooving	Milling	Drilling
BXA20	3300 ~ 3500	1.30 ~ 1.50	H	- Excellent performance in machining hardened steel	■			
BXM10	2700 ~ 2900	0.80 ~ 0.90	H	- Suitable for machining hardened steel with continuous cutting at high speed	■			
BXM20	3500 ~ 3700	1.35 ~ 1.50	H	- First choice for machining hardened steel in a wide range of applications	■			
BXC50	3500 ~ 3700	1.15 ~ 1.30	H	- High fracture resistance in continuous to interrupted machining	■			
BX310	2700 ~ 2900	0.80 ~ 0.90	H	- Good wear resistance - Designed for continuous cutting of hardened steel at high speed	■			
BX330	2800 ~ 3000	0.85 ~ 0.95	H	- Excellent sharpness - Designed for finishing hardened steel	■			
BX360	3200 ~ 3400	1.00 ~ 1.10	H	- Suitable for general-purpose machining of hardened steel	■	■		
BX380	3500 ~ 3700	1.15 ~ 1.30	H	- High fracture resistance - Suitable for heavy interrupted cutting of hardened steel	■			
BX530	2800 ~ 3000	0.85 ~ 0.95	H	- Suitable for finishing hardened steel with high surface quality	■			
BXC90 (BX90S)	3900 ~ 4100	1.80 ~ 1.90	K	- Suitable for machining cast iron at high speed	■		■	
BX910	2600 ~ 2800	0.80 ~ 0.90	K	- Excellent wear resistance in high-speed machining - Ideal for machining centrifugally cast iron	■		■	
BX930	3000 ~ 3200	0.95 ~ 1.20	K	-Designed for machining ductile cast iron	■			
BX950	3900 ~ 4100	1.80 ~ 1.90	K S	- High fracture resistance - Good performance in high-speed machining	■		■	
BX850	3300 ~ 3500	0.75 ~ 0.85	K H	- High fracture resistance in machining cast iron - Suitable for hardened steel finish milling	■		■	
BX870	3000 ~ 3200	0.95 ~ 1.20	K	- High wear resistance - Suitable for machining cylinder liners made of cast iron	■		■	
BX470	4100 ~ 4300	1.90 ~ 2.10	Sintered metal	- Excellent sharpness - Suitable for machining ferrous sintered metal	■			
BX480	4100 ~ 4300	1.90 ~ 2.10	Sintered metal	- Hardest grade of all T-CBN grades - Suitable for machining ferrous sintered metal	■			
M714B	3000 ~ 3200	1.00 ~ 1.10	S	- High wear resistance and thermostability - Good performance in high-speed machining of Inconel	■			

PCD (T-DIA)

Grades	Grain size (μm)	Hard-ness (Hv)	T.R.S. (GPa)	Application	Feature	Turning	Grooving	Milling	Drilling
DX110	< 1	8500	1.8	N	- Excellent sharpness for high surface quality - Suitable for finishing non-ferrous metal and nonmetal				
DX120	4.5	9000	1.8	N	- Suitable for precision machining of non-ferrous metal and nonmetal				
DX140	12.5	10000	1.7	N	- High wear resistance - Suitable for machining non-ferrous metal and nonmetal				
DX160	28	11000	1.6	N	- Designed for machining ceramic, cemented carbide, and nonmetal				
DX180	45	12000	1.5	N	- High wear resistance - Designed for ceramic, cemented carbide, and nonmetal				

Uncoated Cemented Carbide

Grades	Specific gravity	Hard-ness (HRA)	T.R.S. (GPa)	Application	Turning	Grooving	Milling	Drilling
UX30 P30 M30	12.6	91.1	2.3	P M				
TH10 P10 M10 K10 N10	14.7	92.0	2.4	P M K N				
KS05F K05 S05 N05	15.0	93.0	2.9	K S N				
KS15F N15	14.4	91.5	3.0	N				
KS20 K20 N20 S20	14.5	90.8	2.8	K S N				
TH03 P05 M05 K05 N05	13.8	93.8	1.9	P M K N				
F	14.9	93.4	2.5	P K				
EM10 P10 - P25 K10 - K25	14	91.5	3.4	P K				

Grades	Specific gravity	Hard-ness (HRA)	T.R.S. (GPa)	Application	Turning	Grooving	Milling	Drilling
UM K10 - K25 N10 - N25	13.9	90.9	3.5	K N				
G2 K10 - K25 N10 - N25	15	90.8	2.7	K N				
G1F P10 - P25 K10 - K25	15.1	92	2.6	P K				
MD10 P10 - P25 M10 - M25	15	92.8	3.4	P M				
MD20 P20 - P35 M20 - M35	14.4	91.5	3.9	P M				