
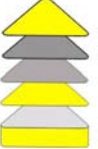









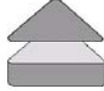



Grade and Application Data

CVD COATED				
Grade	ISO Class	Industry Class	Description	Coating
AN2015 Roughing to Semi-Finishing	P10-P40 M10-M30 K10-K30	C2 C6	AN2015 is based on a hard, cobalt-enriched substrate with good resistance to plastic deformation due to high hot hardness. A CVD coating of TiCN, Al ₂ O ₃ , and TiN gives it excellent shock and abrasive wear resistance. AN2015 is recommended for roughing to medium machining.	 TiN Al ₂ O ₃ TiCN Substrate
AN2020 Roughing to Semi-Finishing	P15-P30 M15-M30	C6	AN2020 is based on a hard, cobalt-enriched substrate and has a multi-layered gold coating to provide excellent thermal, wear, and mechanical shock resistance. Perfect general-purpose grade for medium speeds and feeds in interrupted to semi-finishing cuts on carbon and alloy steels.	 TiN TiCN TiC TiN Substrate
AN2025 Roughing to Semi-Finishing	P15-P35 M15-M25	C5	AN2025 has a tough, cobalt-enriched substrate with a multi-layer TiCN/Al ₂ O ₃ /TiN coating to enhance edge strength. This is the preferred grade for high speed machining of stainless steels and most steels. Performs well in roughing to semi-finishing.	 TiN Al ₂ O ₃ TiCN Substrate
AN2035 Roughing, Interrupted Cuts	P25-P40 M20-M35	C5	AN2035 has a very tough, cobalt-enriched substrate with a four-layer coating of TiN, TiC, TiCN, and TiN. Designed for general purpose machining and roughing of carbon, alloy, and stainless steels at low to medium speeds and medium to high feed rates. Can withstand severe interruptions.	 TiN TiCN TiC TiN Substrate
AN3020 Semi-Finishing to Finishing	P15-P30 M10-M30 K10-K30	C2 C6	AN3020 is based on a hard substrate with good resistance to plastic deformation due to high hot hardness. A CVD coating of TiCN and Al ₂ O ₃ provides excellent flank wear resistance. Designed for light roughing of cast irons and medium-speed machining of alloy steels in the hardness range of 25 to 40 HRc. Can withstand light interruptions.	 Al ₂ O ₃ TiCN Substrate
AN3030 Light Roughing to Finishing	P15-P40 M15-M40 K15-K30 H15-H30	C2 C5-C6	AN3030 is based on a tough, high wear-resistant substrate with a TiCN/Al ₂ O ₃ /TiN coating. Specially developed for milling operations, AN3030 can be used on a wide variety of steels, stainless steels, and cast iron at medium to high speeds.	 TiN Al ₂ O ₃ TiCN Substrate
AN4030 Roughing to Semi-Finishing	P30-P40 M25-M35	C5	AN4030 has a very tough alloyed, cobalt-enriched substrate with a multi-layered TiN/TiC/TiCN/TiN coating. A great general-purpose grade for drilling at medium to high cutting speeds.	 TiN TiCN TiC TiN Substrate
AN4040 Light Roughing to Finishing	P25-P40 M20-M35	C5 C6	AN4040 is a tough, unalloyed substrate coated with a multi-layered TiN/TiC/TiCN/TiN coating. Fine grain structure offers good wear resistance. Preferred choice for drilling.	 TiN TiCN TiC TiN Substrate
AN4045 Roughing, Interrupted Cuts	P30-P45 M25-M40	C5	AN4045 is an extremely tough grade with a four layer coating of TiN, TiC, TiCN, and TiN. This is an excellent grade for machining at low cutting speeds and very high feed rates in severe interrupted cuts. Designed for rough milling and drilling of steels and stainless steels.	 TiN TiCN TiC TiN Substrate



Grade and Application Data

PVD COATED				
Grade	ISO Class	Industry Class	Description	Coating
AN4120 Roughing to Semi-Finishing	P30-P40 M25-M40	C5	AN4120 has a very tough cobalt-enriched substrate that is PVD coated with a thin layer of TiCN to provide abrasion resistance and edge strength. Preferred grade for rough milling steels and stainless steels.	 TiCN Substrate
AN6115 Light Roughing to Finishing	N05-N15 S10-S25	C3	AN6115 is a PVD TiN coated grade with a very fine grained, hard substrate developed for non-ferrous materials and high temperature alloys. The preferred grade for machining aluminum.	 TiN Substrate

UNCOATED				
Grade	ISO Class	Industry Class	Description	
AN2 Roughing to Semi-Finishing	K10-K25 N05-N15 S10-S20	C2	AN2 is an uncoated, unalloyed grade with good abrasive wear resistance. Designed for medium to rough milling and drilling of cast iron, non-ferrous materials, and high temperature alloys.	
AN6 Roughing to Semi-Finishing	P25-P35	C5 C6	AN6 is an uncoated alloyed grade for general purpose machining of steels. Good balance of wear resistance and toughness. Designed for medium cutting speeds and feed rates with medium interrupted cuts.	
AN20 Roughing to Medium Machining	K25-K40 N20-N35 S20-S35	C1	AN20 is an uncoated, unalloyed micro-grain grade with medium abrasion resistance and high fracture toughness. Designed for rough milling and drilling of cast irons, non-ferrous metals, and high-temperature alloys	
AN23 Semi-Finishing to Finishing	K05-K20 N01-N10 S05-S15	C3	AN23 is an uncoated, hard, unalloyed sub-micron grain grade. Exhibits excellent edge wear resistance combined with very high strength for machining heat resistant alloys, titanium, aluminum, and non-metals at high speeds and low feeds.	
AN28 Roughing to Finishing	K15-K30 N10-N20	C2	AN28 is an uncoated, alloyed substrate specifically designed for roughing to finishing operations on cast irons and non-ferrous materials. First choice for nodular cast iron.	





Grade and Application Data

P Steel alloys, cast steels, ferritic and martensitic stainless steels, and long chipping malleable irons					M Austenitic stainless steel, free machining steel, manganese steel, alloy cast iron, and malleable iron					K Cast iron and short chipping malleable iron									
C8		C7		C6	C5							C4		C3		C2	C1		
P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30	K40					
		AN2015					AN2015					AN2015							
		AN2020					AN2020					AN2020							
		AN2025					AN2025					AN2025							
			AN2035					AN2035					AN2035						
		AN3020					AN3020						AN2				AN20		
		AN3030					AN3030					AN23							
			AN4030					AN4030				AN28							
			AN4040					AN4040											
			AN4045					AN4045											
			AN4120					AN4120											
			AN6																
More Wear ← → More Toughness					More Wear ← → More Toughness					More Wear ← → More Toughness									

N Non-ferrous metals, plastics, and wood					S High temperature alloys (nickel, iron, and cobalt based), titanium and titanium alloys					H Hard materials, such as chilled cast iron, hardened steel and hardened cast iron				
N01	N10	N20	N30	N40	S01	S10	S20	S30	S40	H01	H10	H20	H30	H40
	AN6115						AN6115					AN3030		
	AN2						AN2							
		AN20						AN20						
	AN23					AN23								
		AN28												
More Wear ← → More Toughness					More Wear ← → More Toughness					More Wear ← → More Toughness				