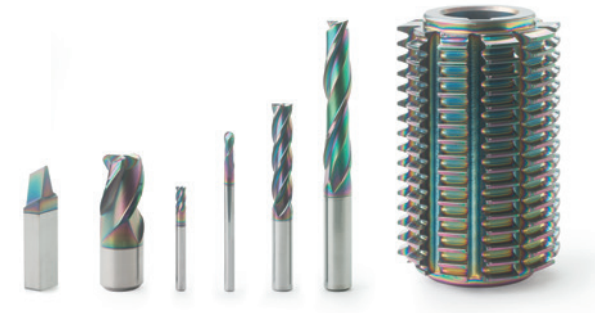




Coating solutions for Cutting Tools

AuroraX™ Plus

AuroraX Plus is a nanocomposite multilayer coating for machining difficult-to-cut and hardened materials. High hot hardness, thermal stability, oxidation resistance and low thermal conductivity reduce wear and heat transfer while its smooth, low-friction surface aids chip flow and suppresses built-up edge. Suitable for shank tools, hobs and stick blades in wet or dry machining.



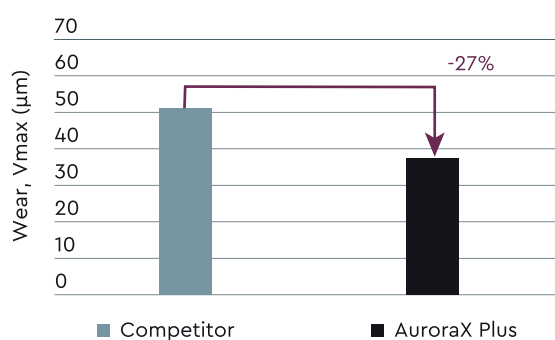
Coating specification

Coating material	TiAlSiXN
Microhardness (HV 0.02)	3900
Thickness range [µm]	2 – 4 µm
Max. service temperature	1100°C
Deposition temperature	450 – 500°C
coating color	Rainbow

Coating performance

Tool	Ball end mill
Dimension	Ø 6 mm
Workpiece material	Inconel 718
Cutting speed m/min	60
Machining condition	wet
Source of data	OEM customer

Milling



Maximizer™ Plus

Maximizer Plus is a significantly improved TiAlN coating. It is ideal for milling and drilling of a broad range of low to high ten-sile strength and tool steels up to 50 HRC, cast irons and some stainless steels at moderate cutting speeds and temperatures below 850 °C.



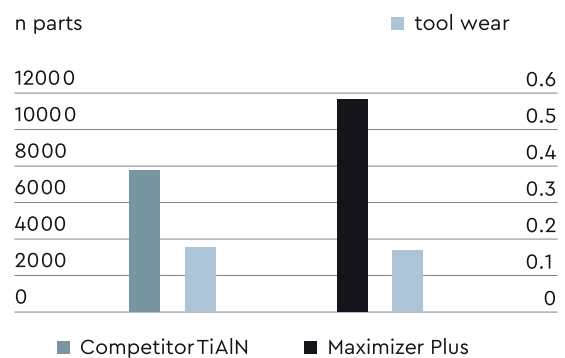
Coating specification

Coating material	TiAlN
Microhardness (HV 0.02)	3100
Thickness range [µm]	2 – 4 µm
Max. service temperature	850°C
Deposition temperature	450 – 500°C
coating color	purple-black

Coating performance

Tool	CC drill
Dimension	Ø 6 mm
Workpiece material	17225
Cutting speed m/min	90
Machining condition	wet
Source of data	OEM customer

Drilling



Crosscut™ Plus

The AlCrN-based Crosscut™ Plus is the most versatile coating for wet and dry machining at medium to high speeds in milling, drilling and gear-hobbing operations with temperatures up to 1050 °C. Its all-rounder qualities make it suitable for a wide range of materials, from low- to high-tensile steels, cast irons, tool steels, stainless steels, titanium and nickel alloys.



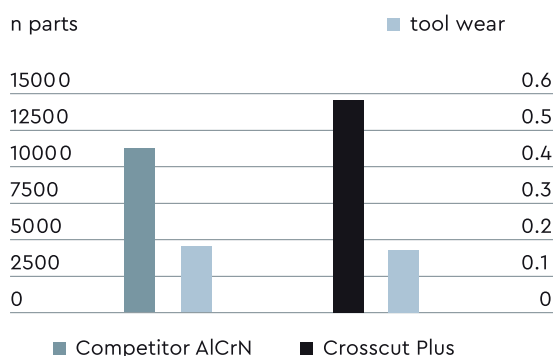
Coating specification

Coating material	AlCrN
Microhardness (HV 0.02)	3200
Thickness range [µm]	2 – 4 µm
Max. service temperature	1050°C
Deposition temperature	450 – 500°C
coating color	grey

Coating performance

Tool	CC hobs
Dimension	Ø 45 mm
Workpiece material	1.7131
Cutting speed m/min	400
Machining condition	dry
Source of data	OEM customer

Gear Cutting



Hardcut™ Plus

Hardcut Plus, a TiSiN based multi-layer coating, has been developed for high speed end-milling and gear hobbing of the hardest and toughest materials including exotic nickel and titanium alloys under low lubrication and dry conditions. It performs best on tungsten carbide tools where it withstands temperatures of up to 1100 °C at the cutting edge.



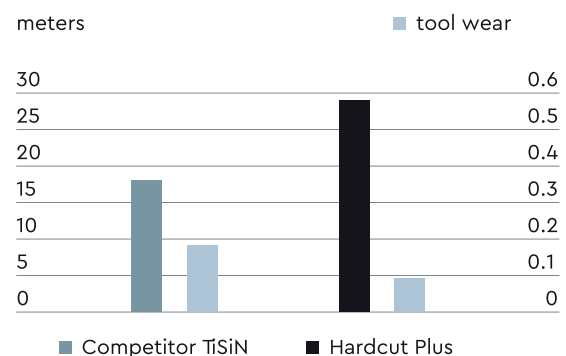
Coating specification

Coating material	TiSiN
Microhardness (HV 0.02)	3800
Thickness range [µm]	2 – 4 µm
Max. service temperature	1100°C
Deposition temperature	450 – 500°C
coating color	Copper

Coating performance

Tool	CC end mill
Dimension	Ø 16 mm
Workpiece material	1.4418
Cutting speed m/min	180
Machining condition	low lubrication
Source of data	OEM customer

Milling



Tetrabond™ Plus

Tetrabond™ Plus is a thin, smooth and extremely hard ta-C coating for machining non-ferrous metals, composites and plastics. With up to 80% sp³ content and hardness above 5000 HV, it preserves sharp cutting edges, reduces friction and prevents material build-up. Ideal for graphite, GFRP, PCB materials, high-Si aluminum, copper alloys, brass, bronze and sticky plastic material.



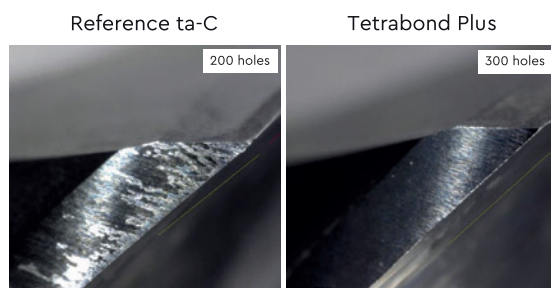
Coating specification

Coating material	ta-C
Microhardness (HV 0.02)	>5000
Thickness range [μm]	0.5 – 2 μm
Max. service temperature	500°C
Deposition temperature	Below 300°C
coating color	Rainbow / dark grey-black

Coating performance

Tool	Drilling
Dimension	Ø 6 mm
Workpiece material	Al7075
Cutting speed m/min	160
Machining condition	wet
Source of data	OEM customer

Drilling

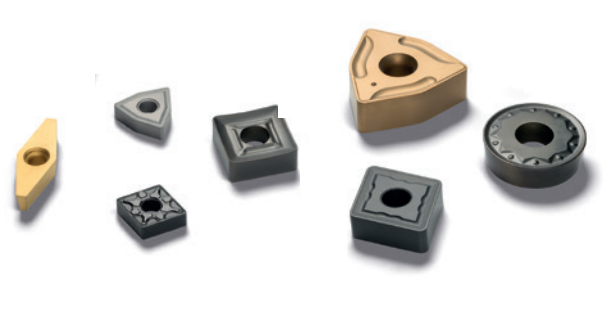


Al sticking clearly visible.

Al sticking effectively suppressed!

Ionbond™ CVD 29 Ultra

Ionbond™ CVD 29 Ultra is a tough, hard CVD coating for high-speed machining of steel and cast iron. Its tailored α-Al₂O₃ structure reduces crater and flank wear, suppresses chipping and cracking, and withstands interrupted cutting. High hot hardness, thermal stability and chemical inertness support turning, milling, peeling and scarfing applications. Available in gold or black.



Coating specification

Coating material	TiN/MT-TiCN/ α-Al ₂ O ₃ /(TiN)
Microhardness (HV 0.02)	3000
Thickness range [μm]	10 – 20 μm
Max. service temperature	1200°C
Deposition temperature	1000°C
coating color	Gold or black

Coating performance

Tool	Milling insert
Workpiece material	CK45
Cutting speed m/min	80
Feed	0.1 mm
Machining condition	wet
Source of data	OEM customer

Milling

