



PVD COATINGS
FOR CUTTING TOOLS

TOOLING POTENTIAL IS BASED ON CUTTING PERFORMANCE

voestalpine eifeler Coatings has improved on a series of Physical Vapor Deposition (PVD) coatings for the cutting tool industry.

Cutting tools using high and ultra-high speeds generate much heat which can weaken the tool and reduce tool life. Common failure modes that a coating can protect against are premature edge wear, thermal failure and edge build-up. This is mainly achieved through reduced friction, abrasion protection and reduction of edge buildup. With the introduction of **CROSAL®-plus**, eifeler created a PVD coating with greatly improved thermal stability for the most demanding applications. This provides significantly improved tool life over traditional coatings such as AlTiN, TiCN and TiN.



OUR COATINGS

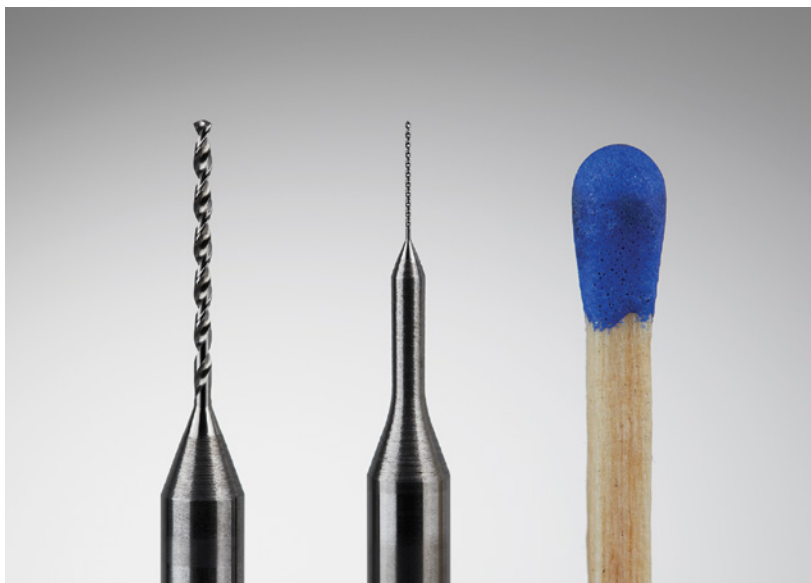
PVD Coating	TiN	EXXTRAL®-plus	VTA	VARIANTIC®	CROSAL®-plus	SISTRAL®	SISTRAL®-Gold
Coating Material	TiN	AlTiN (stacked)	TiAlN (ML)	TiAlCN (ML)	AlCrN	AlTiN (Nanostructured)	AlTiN (Nanostructured) +
Color	gold	anthracite	anthracite	old rose	slate-gray	anthracite	gold
Applications	<ul style="list-style-type: none"> » significantly reduced tool wear through cold weld-on » especially suitable for use in the food/beverage and medical technology industries 	<ul style="list-style-type: none"> » especially recommended for greater coating thicknesses, e.g. for drilling » improved resistance towards corrosion 	<ul style="list-style-type: none"> » coating for a wide range of carbide, cermet and high-speed steel tooling » machining of cast iron and nickel based high temperature alloys » high-speed operations, semi-dry or dry machining 	<ul style="list-style-type: none"> » excellent for precision cutting results » reaming and milling of steels 	<ul style="list-style-type: none"> » perfectly suited for the challenging areas of dry cutting, as well as the numerous applications for shank type tools and broaches 	<ul style="list-style-type: none"> » standard for hard metal cutting » standard for hard, dry and high-speed machining » metal cutting tasks (milling, drilling, turning, sawing, etc.) » high-performance cutting of very abrasive or hard materials (steel > 54 HRC) in dry, high-speed applications 	<ul style="list-style-type: none"> » especially designed for materials that are difficult to cut » ideally suited for machining difficult-to-machine materials such as VA steel, titanium or Inconel

NONFERROUS APPLICATIONS

PVD Coating	ZrN	DLC: SUCASLIDE®	DLC: CARBON-X®
Coating Material	ZrN	DLC Coating a.C:Cr	a-C:H Based DLC Coating a.C:Cr
Color	pale yellow	black	dark gray
Applications	» machining on Non ferrous materials	» machining on Non ferrous materials	» Machining on Non ferrous materials

MICRO TOOLS & TAPS

PVD Coating - Ultrafine series	SISTRAL®	TiN	TiCN
Coating Material	AlTiN (Nanostructured)	TiN	TiCN (ML)
Color	anthracite	gold	blue gray
Applications	<ul style="list-style-type: none"> » standard for hard metal cutting. » stadard for hard, dry and high-speed machining » metal cutting tasks (milling, drilling, turning, sawing, etc.) » high-performance cutting of very abrasive or hard materials (steel > 54 HRC) in dry, high-speed applications 	<ul style="list-style-type: none"> » significantly reduced tool wear through cold weld-on » especially suitable for use in the food/beverage and medical technology industries 	<ul style="list-style-type: none"> » milling, turning, drilling and cutting tools for the working of high and low alloy steels » high feed rates and high cutting speeds when temperatures at the cut edges are not excessive » highly suitable for HSS milling cutters in cooled steel machining



Our **Ultrafine series** / SPCS-technology is the solution. SPCS stands for “**strongly poisoned cathode surface**” and describes our special PVD arc deposition technology, leading to outstanding coating properties by an innovative control mechanism of the process gases.

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ONE STEP AHEAD.