



PVD COATINGS  
FOR CUTTING TOOLS

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# 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.



## SOME OF OUR COATINGS

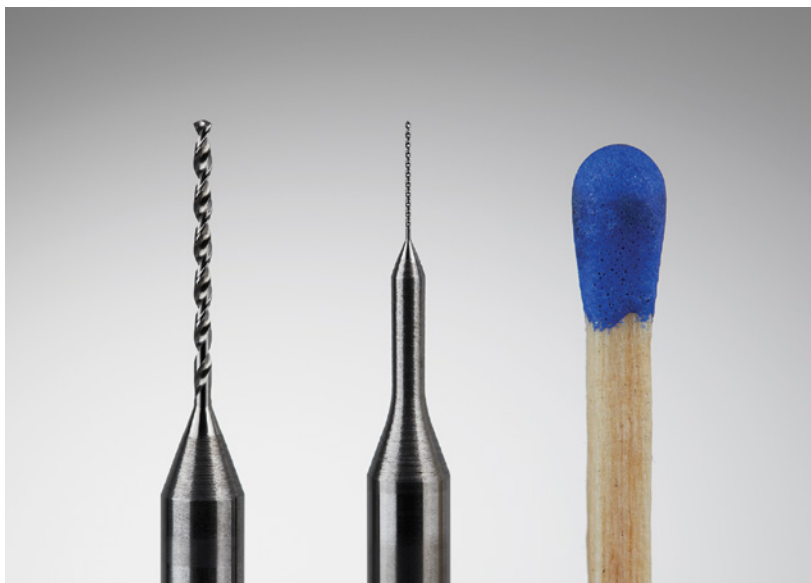
PVD Coating	TiN	EXXTRAL®-plus	VTA	CROSAL®-plus	SISTRAL®	SISTRAL®-Gold	SUBLIME®
<b>Coating Material</b>	TiN	ALTiN (stacked)	TiAlN (ML)	AlCrN based	AlTiSiN (Nanostructured)	AlTiSiN based (Nanostructured) +	AlCr + Si
<b>Color</b>	gold	anthracite	anthracite	slate-gray	anthracite	gold	gray
<b>Applications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

## 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"> <li>» standard for hard metal cutting.</li> <li>» stadard for hard, dry and high-speed machining</li> <li>» metal cutting tasks (milling, drilling, turning, sawing, etc.)</li> <li>» high-performance cutting of very abrasive or hard materials (steel &gt; 54 HRC) in dry, high-speed applications</li> </ul>	<ul style="list-style-type: none"> <li>» significantly reduced tool wear through cold weld-on</li> <li>» especially suitable for use in the food/beverage and medical technology industries</li> </ul>	<ul style="list-style-type: none"> <li>» milling, turning, drilling and cutting tools for the working of high and low alloy steels</li> <li>» high feed rates and high cutting speeds when temperatures at the cut edges are not excessive</li> <li>» highly suitable for HSS milling cutters in cooled steel machining</li> </ul>



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.

## Locations:

### Canada - voestalpine eifeler Coatings voestalpine High Performance Metals Ltd.

2645 Meadowvale Blvd.  
Mississauga, ON L5N 7Y4  
T. +1 (800) 665-8335  
F. +1 (905) 812-9231  
Email: sales.canada@voestalpine.com

### USA - voestalpine High Performance Metals LLC

#### voestalpine eifeler Coatings LLC - Illinois

Headquarters  
2475 Millennium Drive  
Elgin, IL 60124  
T. +1 (630) 587-1220  
Email: sales.usa@eifeler.com

#### voestalpine eifeler Coatings LLC - California

EDRO Engineering LLC  
20492 Carrey Road  
Walnut, CA 91789  
T. +1 (909) 594-5751  
Email: coatings@edro.com

#### voestalpine eifeler Coatings LLC - Michigan

2222 Spikes Lane  
Lansing, MI 48906  
T. +1 (517) 708-7945  
F. +1 (517) 913-6279  
Email: sales.usa@eifeler.com

#### voestalpine eifeler Coatings LLC - Mississippi

11175 MS 178  
Olive Branch, MS 38654  
T. +1 (662) 932-8094  
Email: sales.usa@eifeler.com

#### voestalpine eifeler Coatings LLC - Ohio

18687B Sheldon Road  
Middleburg Heights, OH 44130  
T. +1 (216) 658-3870  
F. +1 (216) 658-3871  
Email: sales.usa@eifeler.com

#### voestalpine eifeler Coatings LLC - Tennessee

3450 Old Tasso Road NE  
Cleveland, TN 37312  
T. +1 (423) 790-7382  
F. +1 (423) 790-7386  
Email: sales.usa@eifeler.com

### Mexico - voestalpine eifeler Coatings voestalpine High Performance Metals S.A. de C.V.

#### voestalpine eifeler Coatings - Querétaro

Cerrada de la Noria No. 200 Int. A-14  
Parque Industrial Querétaro, C.P. 76220.  
Querétaro, México  
T. +52 (442) 689-5900  
+52 (442) 689-5901  
Email: ventas.mexico@voestalpine.com

#### voestalpine eifeler Coatings - Monterrey

Blvd. Milenium No. 5052  
Parque Industrial Milenium Aeropuerto, C.P. 66626  
Apodaca, Nuevo León, Monterrey  
T. +52 (81) 8352-5239  
Email: ventas.mexico@voestalpine.com

[www.eifeler.com/northamerica](http://www.eifeler.com/northamerica)



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