



Tools for **m**ICRO **m**ACHINING



# Coatings Optimised for Micro Tools



*High Adhesion  
Smooth Surface  
Uniform Coatings  
Consistent Performance*



# AXIS COATINGS

Coatings optimized with extremely smooth surface for frictionless chip removal along flute/ cutting edges

Coating	Coating Class	Composition	Coating Structure	Colour	Micro Hardness (HV 0.05)	Max. Application Temperature(°C)	Friction Coefficient against steel
TINALOX® SN <sup>2</sup>	Supernitride	TiAlN	Nanocomposite	Black Anthracite (+Gold)	3500	1000	0.3
HYPERLOX®	Supernitride	AlTiN	Nanocomposite	Black Anthracite	3700	1100	0.3
CC AluSpeed®	Borid	TiB <sub>2</sub>	Monolayer	Silver Gray	4000	900	–
HSN <sup>2</sup>	Supernitride	TiAlxN	Nanocomposite	Aubergine	3800	1100	0.3

Available coating thickness 1-6 micron.

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## TINALOX® SN<sup>2</sup>

### Applications

- Suitable for machining Steels, Cast irons, Stainless Steels or High temperature alloys.

### Features

- Minimal residual stress assures highest adhesion, especially when there are dynamic forces in machining process.
- Fine grained coating architecture: high toughness with high hardness.
- Suitable in dry and wet operation with highest productivity.
- High oxidation resistance.
- Re-coating possible at a high quality level.
- Most economical Supernitride coating (Cost vs. Productivity)

## HYPERLOX®

### Applications

- Suitable for machining Hardened steels, High strength materials and difficult to machine materials.

### Features

- Fine grained coating architecture: high toughness with high hardness.
- Suitable in dry and wet operation with highest productivity.
- High thermal stability, high oxidation resistance and hot hardness.
- Extremely high adhesion, well suited for strong shear forces.
- Re-coating possible at a high quality level.

## CC AluSpeed®

### Applications

- Suitable for machining Aluminum, Copper and Titanium alloys, AISi alloys(Si up to 10%).

### Features

- Coating preserves sharp cutting edges.
- High toughness at very high hardness.
- Self lubricating properties: low affinity to cold welding / built up edges.
- Low friction at the leading edges resulting in excellent surface finish and hole concentricity.

## HSN<sup>2</sup>

### Applications

- Suitable for machining material having hardness 50 - 70 HRC.

### Features

- Latest generation supernitrides produced by sputtering technology.
- Extremely hard and chemically stable.
- Shorter processing time.