

High Performance PVD Coatings for Carbide Inserts

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In addition to standard coatings for milling applications (TiN, TiAlN, TiCN...) IonBond offers a targeted range of high performance coatings from our Innovative Performance Coating (IPC) portfolio specifically designed for carbide inserts.

IPC coatings are designed to offer properties and performance tailored to respond to the needs of milling, turning and drilling applications and to provide maximum productivity and optimal machine-tool use.



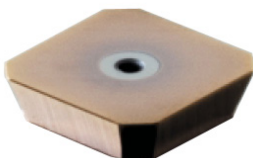
Machining Alloy Steels with IonBond Maximizer Insert

IonBond Maximizer Insert is a nano-composite AlTiN coating designed specifically for carbide inserts. The coating has shown outstanding performance in dry machining a range of alloy steels. Due to its multi-layer structure, IonBond Maximizer Insert is suitable for both continuous and interrupted machining.



IonBond SuperAlTiN - High Performance Milling of Cast Iron and Steels up to 45 HRC

Milling of modern cast irons requires a good resistance to abrasion and excellent edge toughness. IonBond SuperAlTiN is a multi-layer coating especially designed to resist high temperatures and abrasion. The surface properties protect the cutting edge against heat transfer, oxidation and abrasion.



IonBond TopCut offers Excellent performance for Milling and Turning

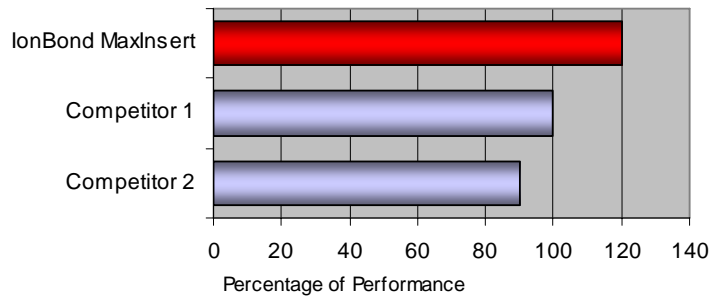
IonBond TopCut is an application specific coating which demonstrates the toughness and abrasion resistance required for machining Inconel, stainless steels and hardened steels (>50 HRC). Due to the excellent resistance to high temperatures (over 1000°C) IonBond TopCut is suitable for a range of dry machining conditions.

Performance Results - Inserts

IonBond MaxInsert

Tool: Carbide Insert for Milling
Workpiece: SKD 11 / D2
Cutting Vc = 250m/min
Data: f=0.2mm/rev
d=2mm
Coolant = no

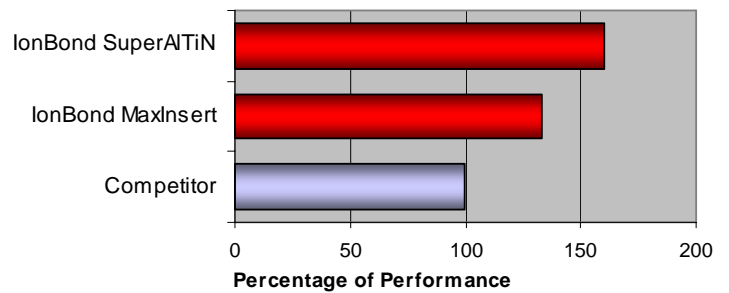
Milling D2 / SKD 11



IonBond SuperAlTiN

Tool: Carbide Insert for Turning
Workpiece: GGG50
Cutting Vc = 120m/min
Data: Coolant = no

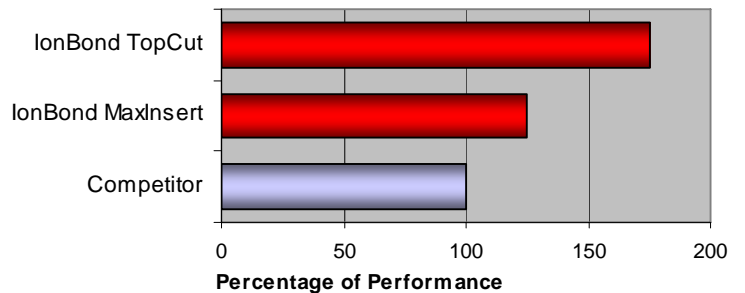
Turning Cast Iron



IonBond TopCut

Tool: Carbide Insert for Turning
Workpiece: Inconel
Cutting Vc = 25m/min
Data: Coolant = yes

Turning Inconel



IonBond Coating	Coating Structure	Thickness (microns)	Hardness (HV 0.05)	Oxidation Temp (°C / °F)	Coef. of Friction vs. Steel, dry	Color
IonBond Maximizer Insert	AlTiN based	2 to 4	3400	1000 / 1830	0.3	Gray Purple
IonBond SuperAlTiN	AlTiN based	2 to 3	3500	1000 / 1830	0.3	Gray Purple
IonBond TopCut	TiSi based	2 to 4	3600	1200 / 2190	0.4	Bronze

Coating selection is application specific and selection criteria are dependent on process parameters. An IonBond Sales Engineer will help you choose the best coating to suit your needs. IonBond Global Headquarters are located in Olten, Switzerland. www.ionbond.com.