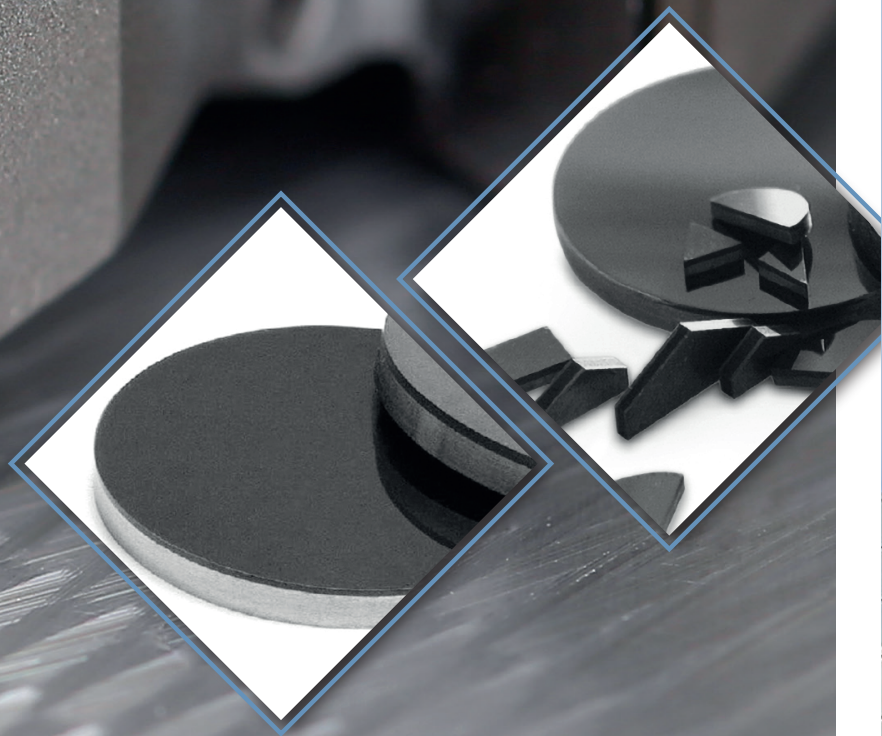


PURE POLYCRYSTALLINE PERFORMANCE

Premium PCD and PcBN materials for machining



Find out more:
www.adico-polydiamond.com

ADICO
ASIA POLYDIAMOND

WHY ADICO?

ADICO develops and produces high-quality, customized cutting materials that tackle even the most demanding machining challenges.

Discover how ADICO can help you overcome your machining challenges

INNOVATION

Continuous striving for enhanced product properties through intensive research and development efforts

QUALITY

Focus on excellent performance and consistent quality

EXPERTISE

Decades of experience in ultrahard supermaterial synthesis

GLOBAL PARTNERSHIP

Close cooperation with leading tool manufacturers worldwide



With its cutting-edge super high-pressure and high-temperature synthesis technology, coupled with decades of accumulated production experience, ADICO is at the forefront of manufacturing ultrahard supermaterials, PCD and PCBN. These exceptional materials are in high demand in the global industrial cutting tool markets, and our dedicated team ensures their supply to customers around the world.

At ADICO, our commitment to excellence is unwavering. We constantly strive for innovation and advancement through intensive research and development efforts. Our goal is to consistently enhance the properties of our products, providing our customers with excellent performance and consistent quality.

In our pursuit of continuous growth, we have successful partnerships with leading global

diamond tool makers. This collaboration has laid a solid foundation for further development and expansion of our capabilities, allowing us to reach new heights in the industry. Driven by our unwavering dedication, all ADICO employees are united in their promise to go above and beyond to establish ourselves as a premium company in the market. Our focus is on delivering top-quality PCDs and PCBNs that not only meet but exceed the expectations of our valued customers.


Choose ADICO for your cutting tool needs and experience the difference that our advanced technology, extensive expertise, and unwavering commitment to excellence can make. It is our firm belief that ADICO is ready to increase its share within the HPHT Ultrahard materials market.



ADICO | PCD

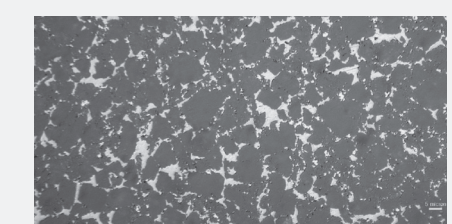
ADICO offers three industrial standard grade (fine, me-
dium, coarse) PCDs for machining both non-ferrous and
non-metallic materials. For optimum performance, ADICO
engineers have developed two new innovative PCD pro-
perties in addition to standard-type ("S"-type) in each PCD
grade as shown below.

Types \ PCD Grades	FINE [2-4 µm]	MEDIUM [8-12 µm]	COARSE [25-35 µm]	Properties
Tougher („X“) type	FX	MX	CX	Higher chip resistance / interrupted cutting
Standard („S“) type	FS	MS	CS	Balanced grade
Ultrahard („U“) type	FU	MU	CU	Higher wear resistance / abrasive material
Submicron grade	UFSII (<1 µm)			Highest chip resistance / best workpiece surface

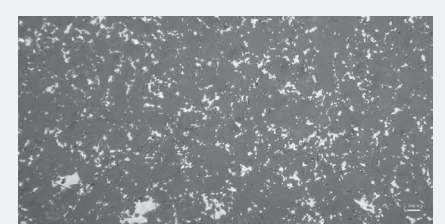


Blanks

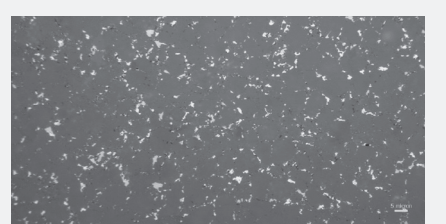
D (Blank Diameter): 62 mm
T (Blank Thickness): 1.60 mm, 2.00 mm, 3.20 mm, 4.80 mm
t (Diamond Thickness): 0.50 ± 0.10 mm
0.35 + 0.10 / -0.15 mm
1.00 ± 0.15 mm



MX



MS



MU

PCD Cutting Tool Blank Application Areas

Fine grain PCD („F-grade“)	Aluminium alloys & Copper alloys	Coarse grain PCD („C-grade“)	Abrasive materials	Medium grain PCD („M-grade“)	Woodworking & Metalworking
FX	- Si-Al alloys - Plastics, Fiberglass	CX	- High Si-Al alloys (20% Si) - Metal matrix composites (MMC) - Plastic composites (glassfiber) - Soft gray cast iron (crank-shaft bore machine)	MX	- Woodworking - Particle board, MDF, Cement board
FS	- Si-Al alloys (for higher Si-content) - Plastics, Fiberglass		- For special purpose with higher diamond content - (MMC-milling, ceramics, WC-machining)	MS	- Metal working (reaming, milling, machining) (automotive parts) - Standard woodworking material (abrasive plastics, abrasive wood-based boards)
FU	- More wear-resistant material	CS			
UFSII (submicron)	- High impact resistance, Mirror finishing - Al alloys, composite material, Titanium, etc	CU	- For difficult-to-machine material (carbon-fibre composite body, PCB, SiC reinforced Al-alloys, Kevlar)	MU	- Difficult-to-machine material (carbon-fibre composite, ceramic parts, plastic lens, Al ₂ O ₃ -coated laminated floor)

ADICO | PcBN

The composition and mechanical properties of ADICO PcBN have been carefully chosen in order to optimize the cutting tool performance in targeted machining applications. This has been achieved during synthesis, by varying the CBN volume %, the CBN grain size, and the chemical composition of the matrix.

PcBN Cutting Tool Product Application

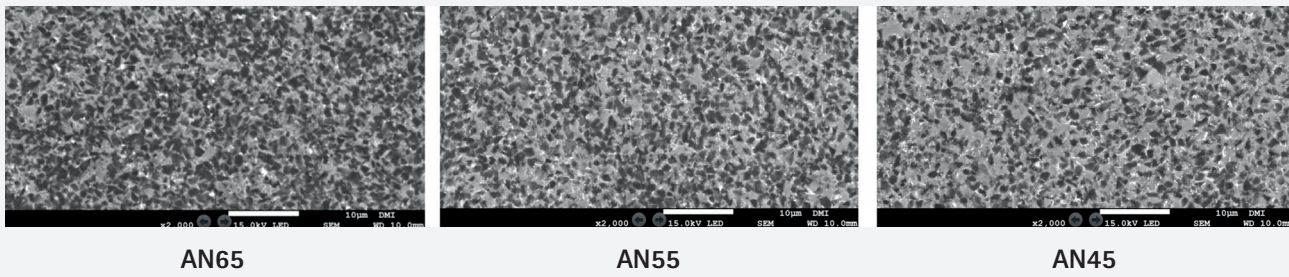
The range of workpiece materials that ADICO PcBN can successfully machine is constantly expanding, but the main material groups are:

Hardened steels	Sintered iron
Hard facing alloys	Superalloys e.g. Inconel 718
Chilled cast iron	Powder metal e.g. automotive valve seats
Pearlitic grey cast irons	

Low content PcBN

ADICO has completed the development of three new low content PcBN grades (AN65, AN55, AN45) for hard machining.

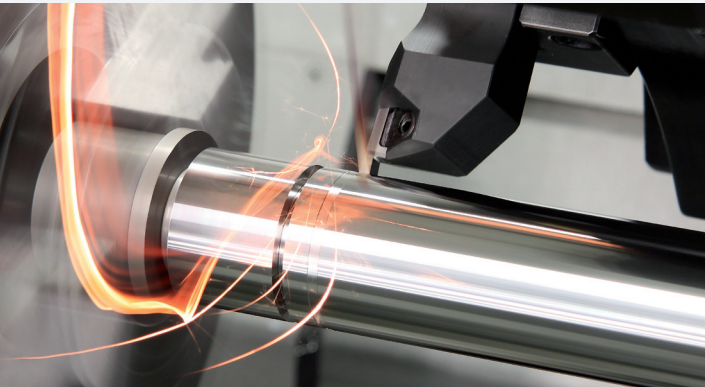
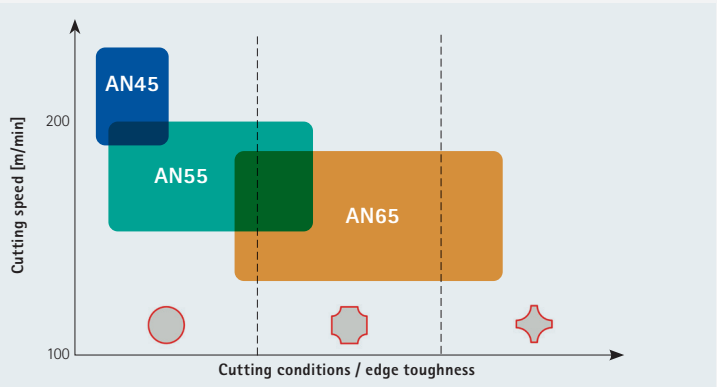
NEW PcBN Series MICROSTRUCTURE



NEW PcBN Series CHARACTERISTIC

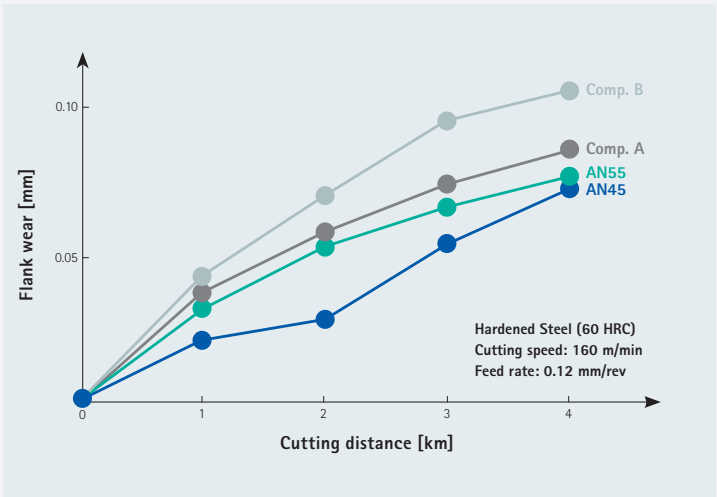
Grade	CBN [vol%]	CBN Grain size [µm]	Main Binder (special ceramics)	Specification
AN65	65	1	TiN	Improved chipping resistance for medium inter-rupted cutting
AN55	55	1	TiCN	Balanced abrasion and impact resistance for continuous and light interrupted cutting
AN45	45	1	TiCN	Excellent crater wear resistance for continuous cutting at high speed and finishing

NEW PcBN Series APPLICATION

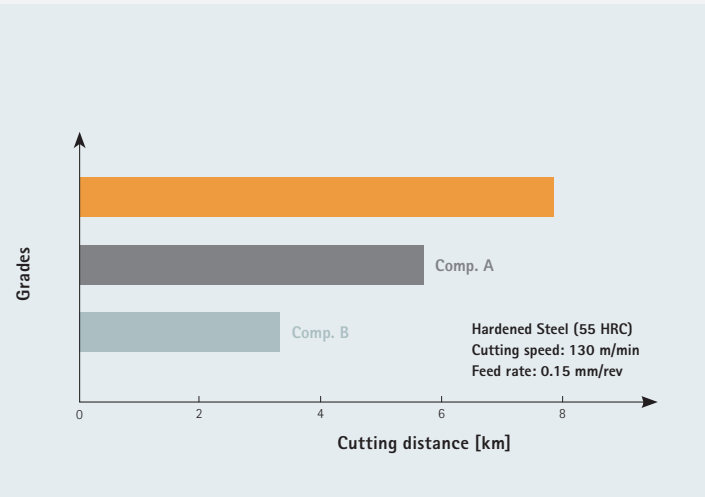


The new PcBN grades minimize chipping of PcBN tool edges by the strong bonding effect of proprietary CBN powder processing technology. And show reduced crater wear due to new developed ceramic binder systems which increased the hardness and heat resistance. The products are designed for processing various heat-treated steel parts and will provide improved workpiece surface quality and tool life.

Continuous cutting in hardened steel



Interrupted cutting in hardened steel




High content PcBN

ADICO offers top quality Polycrystalline Cubic Boron Nitride (PcBN) blanks in three different product configurations:

Single layer PcBN with a WC substrate, double layer PcBN with WC intermediate layer and solid PcBN.

3-different ADICO PcBN Product Configurations

ATN/AN-series
(Single PcBN-layer)



Blank Sizes
Diameter [mm]: 61,0
Thickness [mm]: 1,6, 2,0, 2,4, 3,2, 4,8

ADN-series
(Double PcBN-layer)



Blank Sizes
Diameter [mm]: 61,0
Thickness [mm]: 3,2, 4,8, 6,4

ASN-series
(Solid PcBN-layer)



Blank Sizes
Diameter [mm]: 55,0
Thickness [mm]: 3,3, 5,0

High content PcBN

PcBN	CBN [vol%]	CBN size [µm]	Main Binder	Comment	Description
ATN10	95	3	Co, Al	Standard	Gray cast iron cylinder boring (GG 20/25)
ATN10N	95	3	Co, Al, X	Higher wear resistance	Nodular cast iron tuning (GGG50, 38-42 HRC with good cylindricity)
AN95 <i>NEW</i>	95	2	Co, Al, X	Higher toughness	Higher feed rates than other tools
AN96 <i>NEW</i>	96	1	Co, Al, X	Improved wear behaviour and toughness	- High chipping resistance and wear resistance due to fine grain size and increased CBN content - Unique binder for toughness improvement developed for heavy interrupted machining of hardened steel
ATN16	90	1	Co, Al	Standard	Brake drum tuning (GG20)
AN90 <i>NEW</i>	90	1	Co, Al, X	Higher toughness	- TiAl6V4 exceptionally good for tuning applications - Internal gear tuning with very good surface finish - Ball nose end milling (CF53, 62HRC) with extremely high edge-stability and better surface quality - Sintered geared tuning (SK72-01, 60HRC)

Find out more:



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