

PCBN – Polycrystalline cubic boron nitride

EID offers top quality Polycrystalline Cubic Boron Nitride (PCBN) blanks in 3 different product configurations;

Single layer PCBN with a WC substrate, Double layer PCBN with WC intermediate layer, and Solid PCBN.
PCBN is available in 74,61 and 51 mm discs

3 different EID PCBN Product Configurations

ETN-series

(Single PCBN-layer)



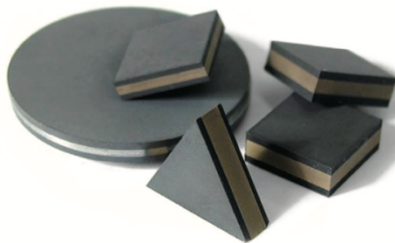
Blank Sizes

Diameter(mm) : 51.0, 61.0, 74.0

Thickness(mm) : 1.6, 2.0, 2.4, 3.2, 4.8

EDN-series

(Double PCBN-layer)



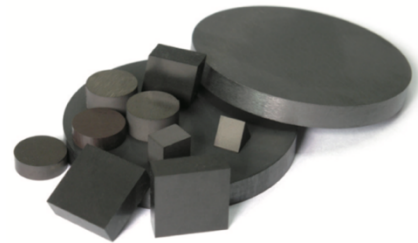
Blank Sizes

Diameter(mm) : 51.0, 61.0, 74.0

Thickness(mm) : 3.2, 4.8, 6.4

ESN-series

(Solid PCBN-layer)



Blank Sizes

Diameter(mm) : 45.0, 55.0

Thickness(mm) : 3.3, 5.0

EID PCBN GRADES

The composition and mechanical properties of EID 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.

HIGH CBN-CONTENT PCBN

PCBN	CBN (vol%)	CBN (size μm)	Main Binder
ETN10	95	3	Co, Al
ETN16	90	1	Co, Al

LOW CBN-CONTENT PCBN

PCBN	CBN (vol%)	CBN (size μm)	Main Binder
ETN35C	65	1	TiC
ETN35N	65	1	TiN
ETN40C	60	3	TiC
ETN45C	55	1	TiC
ETN45N	55	1	TiN
ETN55N	45	1	TiN

EID PCBN Cutting Tool Product Application Areas

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

1. Hardened steels
2. Hard facing alloys
3. Chilled cast iron
4. Pearlitic grey cast irons
5. Sintered iron
6. Superalloys e.g. Inconel 718
7. Powder metal e.g. automotive valve seats

EID PCBN Products

Successful machining applications have been established in the automotive, aerospace, and manufacturing industries, and some examples are:

High CBN content PCBN

- ETN10**
- gray cast iron cylinder boring (GG 20/25)
 - nodular cast iron tuning (GGG50, 38-42 HRC with good cylindricity & higher feed rates than other tools)
- ETN16**
- brake drum tuning (GG20)
 - 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)

Low CBN-content PCBN

- ETN 35C**
- finish machining difficult grey cast irons (milling) and hardened steels
- ETN 35N**
- severe interrupted turning of hardened steels and die steels
- ETN 40C**
- continuous & interrupted turning on hardened steels and valve seat
- ETN 45N**
- turning applications (both continuous and interrupted) of hardened steels and cast irons for superior surface finish
- ETN 45C**
- finish turning on case hardened steels and crank shaft, cam shaft, and gears
 - moderate interrupted hard turning, finish hard milling & high speed continuous turning. It gives an exceptional surface finish to workpiece and provides toughness to cutting tools
- ETN 55N**
- grooving cam shafts & surface milling (cold work tool steel).
 - mild & slight interrupted turning of gear shafts