



***N* NanoAmor** [®]

Nanostructured and Amorphous Materials, Inc.

Superhard Materials

About our Products

Nanostructured and Amorphous Materials Inc. (NanoAmor[®]) introduces a new line of Superhard Materials products. Manufactured using diamond and cubic boron nitride (CBN), these products are carefully designed to provide the highest quality at competitive prices. **NanoAmor[®]** was founded in Los Alamos, NM in 2001 and is a leading nanomaterials company covering a wide range of technologies and applications. Visit us at www.nanoamor.com.

Polycrystalline Diamond- PCD

Polycrystalline Diamond (PCD), specially developed to promote diamond-diamond bonds while increasing its thermal conductivity, hardness and compressive strength (highly resistant to wear and chemical degradation). It is composed of micron sized particles of synthetic diamond, sintered and integrally bonded to a cemented tungsten carbide substrate using a high-temperature/ high-pressure process.

Main Advantages

- High Vickers hardness (80 GPa)
- High thermal conductivity (700 W/m.K)
- Low friction coefficient (0.1-0.3)
- Low thermal expansion ($0.9-1.18 \times 10^{-6}$)
- Low affinity to nonferrous metals and non-metallic materials
- Sintered products are structurally isotropic
- Highest quality available in the market

General Applications

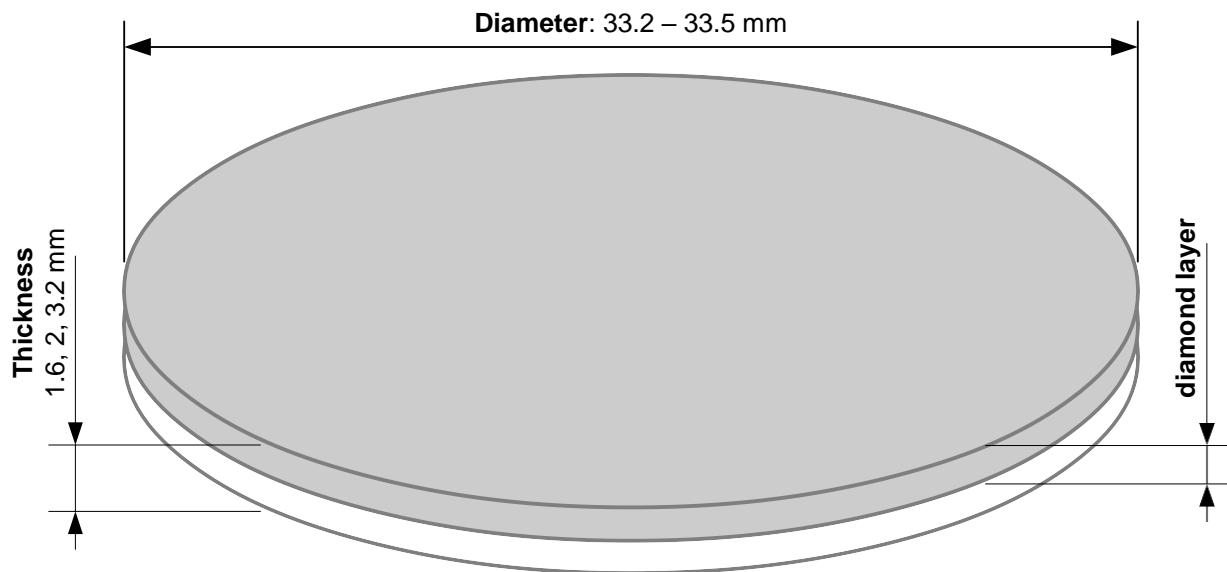
High-speed processing and cutting of:

- non-metallic materials
- non-ferrous metals, and alloy materials
- wood and particle board

Product Availability

Part No	Particle Size	Min – Max Thickness of Diamond				Properties		
		microns	mm	inches		Wear	Toughness	Use for:
ND0454	30	0.65	0.72	0.0255	0.0283	High	High	Wood/ Ceramic
ND0372	25	0.62	0.67	0.0244	0.0263	High	High	Wood/ Ceramic
ND0144	10	0.62	0.67	0.0244	0.0263	High	High	Wood/ Ceramic
ND0226	5	0.62	0.67	0.0244	0.0263	High	High	Wood/ Ceramic
ND0455	30	0.62	0.7	0.0244	0.0275	Ultra-High	Moderate	Particle Board
ND2426	30	0.65	0.72	0.0255	0.0283	High	High	Non-Ferrous
ND2001	25	0.62	0.67	0.0244	0.0263	High	High	Non-Ferrous
ND1762	10	0.62	0.67	0.0244	0.0263	High	High	Non-Ferrous
ND0005	5	0.62	0.67	0.0244	0.0263	High	High	Non-Ferrous
ND1522	1	0.62	0.67	0.0244	0.0263	High	High	Non-Ferrous
ND1751	10	0.65	0.75	0.0255	0.0295	High	High	Stone

Disk Diameter and Thickness



Special services include laser cutting of parts – a fee may apply.

Polycrystalline Boron Nitride

Polycrystalline cubic boron nitride (PCBN) with excellent chemical inertness, wear resistance and heat stability (ideal for high-speed processing of ferrous alloys). Composed of micron sized particles of cubic boron nitride, sintered and integrally bonded to a cemented tungsten carbide substrate using a high-temperature/ high-pressure process.

Main Advantages

- High hardness and high compressive strength (close to those of diamond)
- High wear resistance
- High thermal stability and red hardness
- High chemical stability
- High thermal conductivity

General Applications

- High-speed processing and cutting of ferrous metals and their alloys.

Part Number: NB2075



Polycrystalline Diamond Compacts

Polycrystalline diamond compact (PDC) cutters featuring enhanced bond stability between the carbide and the diamond to reduce delamination of the diamond surface. These cutters are also available with a 3D patterned interface to further reduce damage from impact and shear stress.

Composed of micron sized particles of synthetic diamond, sintered and integrally bonded to a cemented tungsten carbide substrate using a high-temperature/ high-pressure process.

Main Advantages

- High density (low porosity)
- High compositional & structural homogeneity
- Excellent bonding between diamond particles
- High wear resistance
- High impact resistance
- High thermal stability
- Optimized interface between diamond and tungsten-carbide layers for excellent binding
- Best overall performance available in the market

Part Number: NP0144

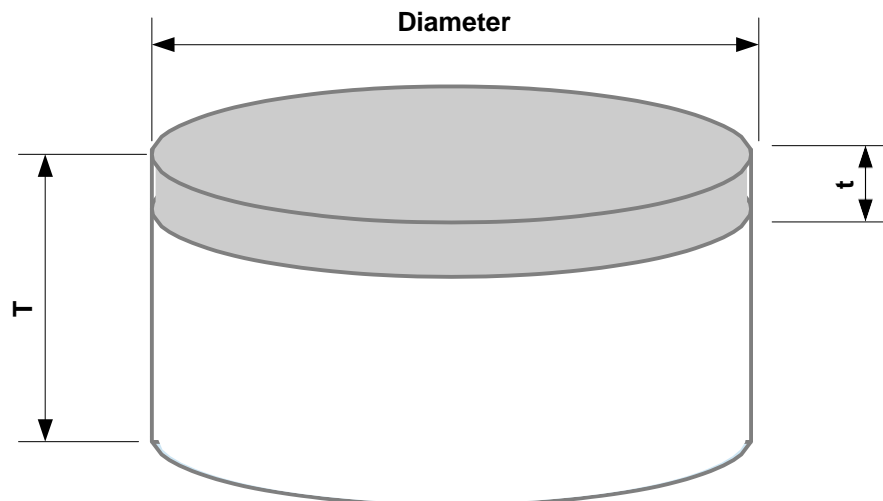
General Specifications:

- Average particle size: 10 mm
- Chamfer size: is 0.3 mm for cutter with diameters of 16 mm and 13 mm. The chamfer is 0.5 mm for cutters with a diameter of 19 mm. Custom chamfer sizes are available upon request.
- Manufacturing time: one month for out of stock items and one week if they are in stock.
- Surface finish: the diamond part is unpolished
- Interface: Planar, or 3D interface.

Available Sizes

Size	Dimension (mm)						Bottom Shape
	Diameter (D)		Thicknes (T)		Thicknes (t)		
	mm	inches	mm	inches	mm	inches	
1925	19.05 ± 0.05	0.7500	25.00 ± 0.10	0.9843	2.0-3.5	0.079-0.138	Spherical
1924	19.05 ± 0.05	0.7500	24.00 ± 0.10	0.9449	2.0-3.5	0.079-0.138	Spherical
1919	19.05 ± 0.05	0.7500	19.00 ± 0.10	0.7480	2.0-3.5	0.079-0.138	Spherical
1916	19.05 ± 0.05	0.7500	16.31 ± 0.10	0.6421	2.0-3.5	0.079-0.138	Flat
1913	19.05 ± 0.05	0.7500	13.20 ± 0.10	0.5197	2.0-3.5	0.079-0.138	Flat
1908	19.05 ± 0.05	0.7500	8.00 ± 0.10	0.3150	2.0-3.5	0.079-0.138	Flat
1619	16.00 ± 0.03	0.6299	19.00 ± 0.10	0.7480	2.0-3.5	0.079-0.138	Spherical
1613	16.00 ± 0.03	0.6299	13.20 ± 0.10	0.5197	2.0-3.5	0.079-0.138	Flat
1608	16.00 ± 0.03	0.6299	8.00 ± 0.10	0.3150	2.0-3.5	0.079-0.138	Flat
1315	13.44 ± 0.03	0.5291	15.50 ± 0.10	0.6102	2.0-3.5	0.079-0.138	Spherical
1313	13.44 ± 0.03	0.5291	13.20 ± 0.10	0.5197	2.0-3.5	0.079-0.138	Flat
1308	13.44 ± 0.03	0.5291	8.00 ± 0.10	0.3150	2.0-3.5	0.079-0.138	Flat

EDM cutting available for PDC cutters – fees may apply



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