



Boron Nitride Ceramics

Boron nitride ceramics have good heat resistance and thermal stability, and are ideal heat dissipation materials and high-temperature insulation materials. And it has good chemical stability and can resist the erosion of most molten metals.

Features Of Boron Nitride Ceramics

- ◆ High heat resistance
- ◆ High conductivity
- ◆ Low thermal expansion coefficient
- ◆ Excellent electrical properties
- ◆ Extremely strong corrosion resistance
- ◆ Low friction coefficient
- ◆ Machinability

Typical Applications

- ◆ Fracture ring for continuous casting of metal
- ◆ Heat treatment fixture
- ◆ Molten metal and glass castings
- ◆ Nozzle for transfer or atomization
- ◆ Laser nozzle
- ◆ Ion thruster discharge channel
- ◆ Induction heating coil bracket
- ◆ High temperature and high voltage electric insulator
- ◆ Crucible and container for high purity molten metal
- ◆ Gasket

Great Ceramic are experts in the production of technical ceramics, we offer ceramic processing, ceramic materials, ceramic casting, ceramic metal packaging and surface metallization services.

[Contact us](#) for more information!

Boron Nitride Ceramics Properties

- ◆ Pyrolytic Boron Nitride(PBN)
- ◆ Hexagonal Boron Nitride(HBN)
- ◆ Composite Boron Nitride Ceramics

MECHANICAL

Properties	Unit	HBN	PBN	Composite BN
Main Ingredients	%	>99%	>99.99%	Many kinds
Colour	—	White	White	Grey
Density	g/cm ³	2	2.0-2.2	2.3-2.9
Hardness(Knoop)	MPa	39	692	>100
Compressive Strength	MPa	100	173	280
Flexural Strength	MPa	30	150	>100

THERMAL

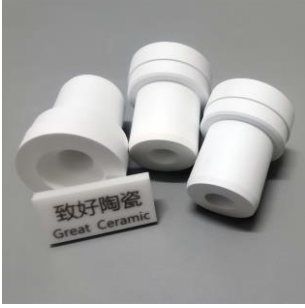
Properties	Unit	HBN	PBN	Composite BN
Maximum Use Temperature	°C (in oxidizing atmosphere)	850	1000	1000
Maximum Use Temperature	°C (in an inert atmosphere)	2200	3000	2000
Maximum Use Temperature	°C (under vacuum environment)	1800	2300	—
Thermal Conductivity	20°C, W/(M · K)	>30	600	—
Thermal Expansion	25 - 1000°C, × 10 ⁻⁶ /°C	> 1.8	—	—
Specific Heat	J/(kg · K)	0.81	0.90	—

ELECTRICAL

Properties	Unit	HBN	PBN	Composite BN
Dielectric Constant	1MHz	4.0	3.0	—
Dielectric Strength	ac-kV/mm	79	56	—
Volume Resistivity	25°C, Ω · cm	> 10 ¹³	> 10 ¹⁴	> 10 ¹³

*The values are typical material properties and may vary according to products configuration and manufacturing process.

Boron Nitride Product Introduction



Boron Nitride Nozzle

Boron nitride ceramic nozzles are suitable for a variety of high temperature and harsh environment applications due to their excellent thermal stability, chemical inertness and mechanical strength.



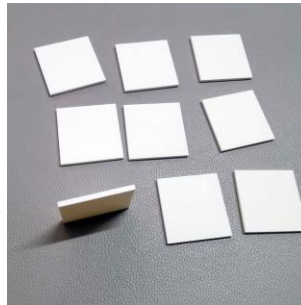
PBN Ceramic Crucible

PBN crucibles have high purity, excellent thermal stability and chemical inertness, making them ideal for use in high temperature and reactive materials processing applications such as semiconductor manufacturing and crystal growth.



Boron Nitride Rod

Great Ceramic can customize boron nitride ceramic rods of different diameters and lengths, which feature high thermal conductivity, excellent thermal shock resistance, chemical inertness and electrical insulation.



PBN Gasket

Great Ceramic can customize pyrolytic boron nitride ceramic gaskets in different specifications, which are ideal for sealing applications requiring high temperature, chemical resistance and electrical insulation.



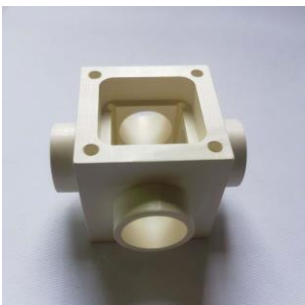
Boron Nitride Washer

Boron nitride ceramic washers offer a winning combination of high heat resistance, self-lubrication, chemical resistance, and good thermal conductivity, making them ideal for demanding environments with heat, friction, and harsh chemicals.



HBN Ceramic Crucible

Hot-pressed hexagonal boron nitride ceramic crucibles offer excellent thermal stability, chemical resistance and high purity, making them ideal for demanding applications in materials research, semiconductor processing and chemical synthesis.



Custom Machining

Great Ceramic has a wide range of grinding and machining equipment to provide customers with efficient ceramic machining solutions.

[Learn More](#)



Boron Nitride Tube

Great Ceramic offers different specifications of boron nitride ceramic tubes with excellent thermal conductivity, high electrical resistance, chemical inertness and mechanical strength.



Boron Nitride Ring

Great Ceramic offers different specifications of boron nitride ceramic rings with excellent thermal conductivity, high electrical resistance, chemical inertness and mechanical strength.



Boron Nitride Parts

Boron nitride ceramic parts offer a winning combination of high heat resistance, excellent thermal conductivity, good electrical insulation, self-lubrication, and chemical resistance, making them ideal for demanding applications.

