

# BORON NITRIDE CERAMIC TECHNOLOGY PARAMETERS

Heegermaterials



Grade		PENSC-T	PENSC-E1	PENSC-E2	PENSC-L	PENSC-N	PENSC-S
Main ingredients		BN+TiB <sub>2</sub> +AlN	BN+ZrO <sub>2</sub> +SiC	BN+ZrO <sub>2</sub> +SiC	BN+AlN	BN+Si <sub>3</sub> N <sub>4</sub>	BN+SiO <sub>2</sub>
Density	g/cm <sup>3</sup>	3.01	2.3-2.35	2.6-2.7	2.8-2.9	2.5-2.6	2.1-2.15
Hardness	HL		570-620	520-550	≥650	650-680	700-750
Flexural Strength	Mpa	155	160	150	250-300	280	75
Coefficient of thermal expansion (25°C-1200°C)	(10 <sup>-6</sup> /K)	6.0-7.0	2.0-3.0	3.0-5.0	4.0-5.0	2.5-3.0	2.5-3.0
Thermal conductivity at 20°C	W/mk	40	15	30	65	45	20
MAX-Temperature of use	oxidizing	950°C	900°C	900°C	950°C	950°C	1000°C+
	inert	2000°C	1700°C	1700°C	2000°C	1700°C	1000°C+
RT Resistivity	Ω .cm	250-1000μμ	>10 <sup>12</sup>	>10 <sup>12</sup>	>10 <sup>14</sup>	>10 <sup>14</sup>	>10 <sup>14</sup>

## Features & Advantages

- A unique formulation process and optimization of structure, BN-E have thermal shock resistance, corrosion resistance, creep resistance performances.
- Adopting international advanced hot-pressing sintering process, fine structure, high purity, with superior physical properties.
- Non-reaction, non-wet and non-contamination by almost all molten metal in high temperature. BN-E is widely used in a variety of molten metal contact applications.

## Typical Applications

- Boron nitride continuous casting break rings
- Boron nitride side dams for thin-strip casting
- Boron nitride nozzles for amorphous and nanocrystalline.
- Nozzles for powder metal atomization