

Boron Nitride (BN) – Grade A



Material webpage



Overview

Grade A is the oldest form of hot-pressed Boron Nitride. Specified into applications 50+ years ago, Grade A still finds a substantial replacement business as relatively high-temperature insulators in legacy semiconductor equipment and defense applications.

Primary Advantages

-  Excellent Thermal Shock Resistance
-  High Electrical Resistivity
-  Low density
-  High thermal conductivity

Applications

Microwave Components

Crucibles & Containers

High Temp. Electrical Insulators

Radar Components

Setter Plates

Metal Spraying Nozzles

	Properties	Units	Grade A
Mechanical	Compressive Strength	MPa	143 / 186 ⊥
	Density	g/cm ³	2.0
	Flexural Strength @ 25°C	MPa	94 / 65 ⊥
	Young's Modulus	GPa	47 / 74 ⊥
Thermal	Thermal Conductivity	W/mK	30 / 34 ⊥
	CTE @ 25°C – 400°C	10 ⁻⁶ /K	3 / 3 ⊥
	CTE @ 400°C – 800°C	10 ⁻⁶ /K	2.0 / 1.4 ⊥
	CTE @ 800°C – 1200°C	10 ⁻⁶ /K	1.9 / 1.8 ⊥
	Maximum Temperature (Air)	°C	850
	Maximum Temperature (Inert)	°C	1200
Electrical	Dielectric Constant @ 1MHz	-	4.6 / 4.2 ⊥
	Dissipation Factor @ 1MHz	-	1.2E ⁻³ / 3.4E ⁻³ ⊥
	Dielectric Strength DC	kV/mm	88
	Volume Resistivity @ 25°C	ohm-cm	>10 ¹³ / >10 ¹⁴ ⊥

Disclaimer: The values presented are mean and typical of those resulted from test samples. They are provided as an indication only to serve as guidance in the design of ceramic components and are not guaranteed in any way. The actual values can vary according to the shape and size of the envisioned component.



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