HEXAGONAL BORON NITRIDE POWDER (HBN)

Hexagonal Boron Nitride Powder is known for its lubricious properties and is an extremely popular dry lubricant. The material has excellent thermal stability and chemical inertness and is therefore often used as a mold release agent for molten metals and salts. The Hexagonal structure of the Boron Nitride improves the strength and hold ability of powder composites.

TYPICAL ANALYSIS

Particle Size D50: -10um

Chemistry	SPEC	TYP
BN	99.0 Min	99.1
B_2O_3	-	.18
Free B	-	.16
NaO_3	< 0.1	.07
Fe_2O_3	< 0.07	.05
CaO	< 0.07	.055
MgO	< 0.01	.006
Al_2O_3	< 0.05	.01
TiO_2	< 0.005	.001

TYPICAL PROPERTIES

- Lubricious
- Thermal Stability
- Chemical Inertness
- High Hardness
- High Temperature Insulator

TYPICAL APPLICATIONS

Lubricant	Thermally Conductive Filler
Cosmetics	Refractory
Mold Release	High Temperature Insulator
High Temperature Equipment	

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BORON CARBIDE TECHNICAL DATA

PROPERTIES	UNITS	VALUE
Physical		
Chemical Formula	-	B_4C
Density, ρ	g/cm^3	2.51
Color	-	black or dark gray
Crystal Structure	-	hexagonal
Water Absorption	% @R.T.	ng
Hardness	Mohs	36
Hardness	knoop (kg/mm^2)	ng
Mechanical		
Compressive Strength	MPa @ R.T.	2.9
Tensile Strength	MPa @ R.T.	155
Modulus of Elasticity (Young's Modulus)	GPa	445
Flexural Strength (MOR)	MPa @ R.T.	375
Poisson's Ratio, υ		0.19
Fracture Toughness, K_{Ic}	MPa x $m^{1/2}$	ng
Thermal		
Max. Use Temperature (* denotes inert atm.)	°C	2450
Thermal Shock Resistance	ΔT (°C)	ng
Thermal Conductivity	W/m-K @ R.T.	28
Coefficient of Linear Thermal Expansion, α_l	μm/m-°C (~25°C through ±1000°C)	5.54
Specific Heat, c_p	cal/g-°C @ R.T.	945
Electrical		
Dielectric Constant	1MHz @ R.T.	ng
Dielectric Strength	kV/mm	ng
Electrical Resistivity	Ωcm @ R.T.	ng

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