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	

ISO 9001:2008
QSR-976

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HEXAGONAL BORON NITRIDE POWDER TECHNICAL DATA

PROPERTIES	UNITS	TEST	VALUE
Physical			
Chemical Formula	-	-	ZBN
Density, ρ	g/cm^3	ASTM C20	2.28
Color	-	-	white
Crystal Structure	-	-	hexagonal
Water Absorption	% @R.T.	ASTM C373	0.0-1.0
Hardness	Mohs	-	2
Hardness	knoop (kg/mm^2)	Knoop 100g	25-205
Mechanical			
Compressive Strength	MPa @ R.T.	ASTM C773	23.5
Tensile Strength	MPa @ R.T.	ACMA Test #4	2.41(1000°C)
Modulus of Elasticity (Young's Modulus)	GPa	ASTM C848	675
Flexural Strength (MOR)	MPa @ R.T.	ASTM F417	51.8
Poisson's Ratio, υ		ASTM C818	0.05
Fracture Toughness, K_{Ic}	MPa x $m^{1/2}$	Notched Beam Test	2.6
Thermal			
Max. Use Temperature (* denotes inert atm.)	°C	No load cond.	985
Thermal Shock Resistance	ΔT (°C)	Quenching	>1500
Thermal Conductivity	W/m-K @ R.T.	ASTM C408	20
Coefficient of Linear Thermal Expansion, α_l	µm/m-°C (~25°C through ±1000°C)	ASTM C372	1.0-2.0
Specific Heat, c_p	cal/g-°C @ R.T.	ASTM C351	0.19
Electrical			
Dielectric Constant	1MHz @ R.T.	ASTM D150	4.0
Dielectric Strength	kV/mm	ASTM D116	374
Electrical Resistivity	Ωcm @ R.T.	ASTM D1829	10^{13}

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