

## Momentive Performance Materials Pyrolytic Boron Nitride (PBN) Coating

Category : Ceramic , Nitride , Other Engineering Material , Ceramic/Metallic Coating

### Material Notes:

High temperature protective coating for graphite. PBN has become the material of choice for compound semiconductor crystal growth and wafer processing. PBN coatings also seal and protect graphite from very corrosive atmospheres including most molten metals, all acids, and hot ammonia. PBN is an electrical insulator which exhibits a high degree of anisotropy, e.g. good thermal conductor parallel ("ab") to substrate and thermal insulator through thickness ("c"). Information provided by Momentive Performance Materials, formerly GE Advanced Ceramics.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Momentive-Performance-Materials-Pyrolytic-Boron-Nitride-PBN-Coating.php](http://www.lookpolymers.com/polymer_Momentive-Performance-Materials-Pyrolytic-Boron-Nitride-PBN-Coating.php)

Physical Properties	Metric	English	Comments
Density	1.95 - 2.22 g/cc	0.0704 - 0.0802 lb/in <sup>3</sup>	

Mechanical Properties	Metric	English	Comments
Modulus of Elasticity	22.0 GPa	3190 ksi	Young's modulus
Compressive Strength	220 MPa	31900 psi	

Thermal Properties	Metric	English	Comments
CTE, linear	2.00 $\mu\text{m}/\text{m}\cdot\text{C}$	1.11 $\mu\text{in}/\text{in}\cdot\text{F}$	ab direction
	@Temperature 20.0 $^{\circ}\text{C}$	@Temperature 68.0 $^{\circ}\text{F}$	
Thermal Conductivity	1.50 - 3.00 W/m-K	10.4 - 20.8 BTU-in/hr-ft <sup>2</sup> - $^{\circ}\text{F}$	in "c" direction
	20.0 - 120 W/m-K	139 - 833 BTU-in/hr-ft <sup>2</sup> - $^{\circ}\text{F}$	in "ab" direction
Maximum Service Temperature, Air	800 $^{\circ}\text{C}$	1470 $^{\circ}\text{F}$	oxidation limit
Decomposition Temperature	2500 $^{\circ}\text{C}$	4530 $^{\circ}\text{F}$	

Optical Properties	Metric	English	Comments
Emissivity (0-1)	0.50	0.50	normal spectrum

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+9 ohm-cm	1.00e+9 ohm-cm	

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