

Momentive Performance Materials BNC2 Boron Nitride (BN) Refractory Composite

Category : Ceramic , Nitride

Material Notes:

Boron Nitride is a unique engineering material. It is a soft, machinable ceramic which can be combined with other refractory ceramics including Aluminum Oxide, Silicon Nitride, Aluminum Nitride, Mullite and Titanium Diboride. This results in composites which are machinable, thermal shock resistant, and chemically compatible in a wide range of environments. In combination with Titanium Diboride, for example, BN can be used as a heating source for the aluminum metallization of films and papers. BN composites are also used as break-rings in the horizontal continuous castings of steel and nozzles in rapid solidification processes. Other composite applications include the following: High temperature refractory shapes Glass forming tools and refractories Molds, dies and refractories for metal forming Furnace vents, stacks and fixtures Grades BNC 1 & 2 offer excellent corrosion and wear resistance, have excellent thermal shock capability and low CTE, are non-wetting and are self lubricating. 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-BNC2-Boron-Nitride-BN-Refractory-Composite.php

Physical Properties	Metric	English	Comments
Density	2.85 g/cc	0.103 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell A	86	86	No Scale Listed, Perpendicular
	93	93	No Scale Listed, Parallel
Modulus of Elasticity	20.7 GPa	3000 ksi	Perpendicular
	66.9 GPa	9700 ksi	Parallel
Flexural Strength	22.1 MPa	3200 psi	Parallel
	46.2 MPa	6700 psi	Perpendicular
	21.4 MPa	3100 psi	Parallel
	@Temperature 1500 °C	@Temperature 2730 °F	
Compressive Strength	33.8 MPa	4900 psi	Perpendicular
	@Temperature 1500 °C	@Temperature 2730 °F	
Compressive Strength	77.9 MPa	11300 psi	Perpendicular
	128 MPa	18600 psi	Parallel
	0.73	0.73	pin-on-disk at 450° C in argon, nickel static substrate, sliding

Coefficient of Friction, Dynamic Mechanical Properties	Metric	English	Comments velocity 0.5m/sec, 2N load, Perpendicular
	0.76	0.76	pin-on-disk at 450Å C in argon, nickel static substrate, sliding velocity 0.5m/sec, 2N load, Parallel
Abrasion	0.018	0.018	mm³/N/m, Wear Rate, Parallel
	0.099	0.099	mm³/N/m, Wear Rate, Perpendicular

Thermal Properties	Metric	English	Comments
CTE, linear	8.30 Åµm/m-Å°C	4.61 Åµin/in-Å°F	Parallel
	@Temperature 20.0 Å°C	@Temperature 68.0 Å°F	
CTE, linear, Transverse to Flow	6.50 Åµm/m-Å°C	3.61 Åµin/in-Å°F	
	@Temperature 23.0 Å°C	@Temperature 73.4 Å°F	
Thermal Conductivity	10.8 W/m-K	75.0 BTU-in/hr-ftÅ²-Å°F	Parallel
	26.5 W/m-K	184 BTU-in/hr-ftÅ²-Å°F	Perpendicular
	4.50 W/m-K	31.2 BTU-in/hr-ftÅ²-Å°F	Parallel
	@Temperature 1500 Å°C	@Temperature 2730 Å°F	
	8.00 W/m-K	55.5 BTU-in/hr-ftÅ²-Å°F	Parallel
	@Temperature 500 Å°C	@Temperature 932 Å°F	
	10.7 W/m-K	74.3 BTU-in/hr-ftÅ²-Å°F	Perpendicular
	@Temperature 1500 Å°C	@Temperature 2730 Å°F	
	18.6 W/m-K	129 BTU-in/hr-ftÅ²-Å°F	Perpendicular
	@Temperature 500 Å°C	@Temperature 932 Å°F	
Maximum Service Temperature, Air	950 Å°C	1740 Å°F	Oxidizing
Maximum Service Temperature, Inert	1500 Å°C	2730 Å°F	Inert/Vacuum

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