



Boron Nitride Coatings

Momentive Performance Materials' coatings offer the benefits of Boron Nitride (BN)—excellent lubricity, non-wetting, and high temperature stability—in an easy-to-apply medium for a wide range of applications.

Key Feature & Typical Benefits

- Electrical insulator
- Low dielectric constant and loss
- High temperature stability
- Thermal conductor
- Lubricious
- Inert & Chemically Stable
- Non-wetting

Release Agents, Lubricants and Protective Coatings

Boron nitride remains lubricious and inert even at extremely high temperatures. Coatings made with BN may prevent sticking to increase the life of dies/molds, improve product surface finishes, and reduce production times.

Metal Processing

In molten metal processing and metal forming applications, BN coatings may protect surfaces which come into contact with hot and molten metals. BN inhibits corrosion and chemical attack and provides easier release and longer mold/die life. Potential applications include casting, stamping, forging, extrusion, and powder metallurgy.

Plastic/Rubber

Producers of injection-molded plastics and elastomers may benefit from BN in die and molding applications. Boron nitride typically improves die release and increases production speeds.

Glass Making

Boron nitride's high temperature lubricating properties make it an excellent candidate to consider for use in glass making where it can help to minimize surface defects, improve mold/die life and release, and reduce clean-up time. Most glass formulations will not stick to BN.

Sintering

Sintering of metallic and ceramic powders is typically done on graphite plates. A coating of BN can virtually eliminate carbon contamination, reactivity and sticking—all of which can occur at sintering temperatures.

Welding and Brazing

Boron nitride coatings are excellent candidates to consider for welding and furnace brazing. They can protect surfaces from weld spatter and provide superior stop-off protection. BN coatings can also protect MIG/MAG welding nozzles from weld spatter.

General Instructions for Use

Boron nitride water-based coatings are available in one and five gallon containers, and in several grades. All formulations can be applied by brushing, rolling, dipping or spraying using various commercially available methods.

Water dilution is recommended to enhance application for grades with higher solids content. Dilution is required for grade GPC, due to its thick consistency. (Please see chart below for dilution details.) Multiple coats may be necessary for complete coverage. Forced drying at 80°C for 20 minutes is recommended for each layer.

BN coatings can be applied to either hot or cold surfaces. Dried coatings can be readily handled, smoothed or polished with a soft, dry cloth.

BN is also available in 13 oz. aerosol spray cans, shipped in 12-can cartons. Each can provides about 100 sq. ft. (9.3 m²) of coverage of high purity, extremely fine BN crystals in a fast-drying, solvent-based carrier. This product produces a smooth coating with even film build.

Boron Nitride Coatings¹

	GPC	EPC	Aerosol Spray	FPD	FPC	LPC
Color	White	White (Green available as grade CPC)	White	White	White (Green available as grade VPC)	White (Green available as grade TPC)
Solvent Type	H ₂ O	H ₂ O	Organic Solvents	Dry	H ₂ O	H ₂ O
Contents Binder	BN Bentonite	BN Bentonite	BN Bentonite	BN/Alumina Bentonite	BN/Alumina Bentonite	BN/Alumina
% Solids	29%	11%	N/A	100%	16%	25%
Recommended Dilution, if required	2:1	Optional	--	Per Instructions	Optional	2:1
Use Temperature - Oxidizing - Inert/Vacuum			850°C 1800°C			
Application	Concentrated - General Lubrication, Release	Economical - General Lubrication, Release	Convenience - General Lubrication, Release	Release, Forging, Lubrication, Refractory Projection	Release, Forging, Lubrication, Refractory Projection	Concentrated - Excellent Lubrication, Release, Refractory Projection
Electrical Resistivity of Boron Nitride Component (typical)			>1 x 10 ¹⁵ ohm-cm			

¹ Typical data are average and actual results may vary. Typical data shall not be used as product specifications.

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LOCATION	EMERGENCY SERVICE PROVIDER	EMERGENCY CONTACT NUMBER
Mainland U.S., Puerto Rico	CHEMTREC	1.800.424.9300
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China	NCEC	+86.10.5100.3039
Latin America (except Brazil)	NCEC	+44(0) 1235239670
Brazil	SOS Cotec	08000111767 or 08007071767
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At sea	Radio U.S. Coast Guard in US waters NCEC in International waters	+44(0) 1235239670

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