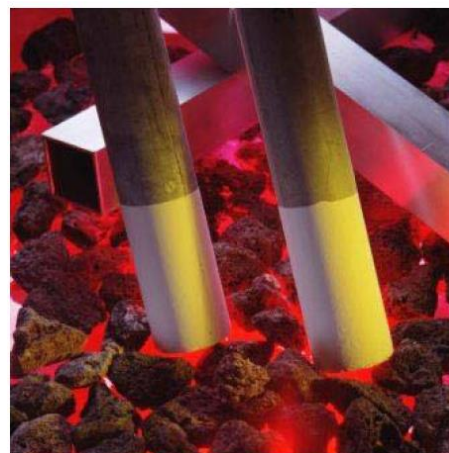


BORON NITRIDE COATINGS

OVERVIEW

Boron Nitride coatings are entirely inorganic, composed of Boron Nitride powder and a high-temperature bond phase. Supplied in a liquid form suitable for brushing, they can be diluted with water to spraying and dipping consistencies and applied to a variety of porous and non-porous materials including graphite, metals and ceramics.

Unaffected or non-wet by most molten metals, slags and drosses, Boron Nitride Coatings can be used up to 1372°C (2500°F) in a reducing atmosphere and up to 850°C (1562°F) in an oxidizing atmosphere, and retain many of its properties such as high temperature lubricity and corrosion resistance.



Green tinted coatings

Green tinted Boron Nitride Coatings are colored green for improved visibility during application, are pH neutral, Cobalt and Chromium free. Green tinted coatings remain color fast at aluminum melt temperatures and can be easily applied as a first coat to white cast refractory that is visible if touch up is necessary.

Various grades are differentiated by the type of inorganic binder used, which allows for a range of physical properties such as hardness, adherence, useful temperature range, and ease of use for a variety of applications.

SPECIFIC GRADES

Various compositions are formulated using inorganic binders. As a result, variations in physical properties such as hardness, adherence, useful temperature range, and ease of application are obtained. Four basic types of coatings are available:

- **Type Sf / Type Sfg**- A general-purpose coating comprised of 23% BN usually requires dilution with water to the desired consistency. **Sf** can also be used as is depending upon the application.
- **Type 10Sf/ Type 10Sfg** - 10% BN content provides thinner consistency coating, ready-to-use formulation with no additional dilution required.
- **Type A** - A high-viscosity paste with a unique aluminum phosphate binder. It has a higher solids content than other coatings. Very strong bond with many different refractories. Must be diluted.
- **Type V** - A thick composition that dries to a harder surface used in applications where a strong binder is needed such as coating moving parts in molten metal. Excellent for coating graphite.

BORON NITRIDE COATINGS

General application and drying instructions for each composition are available on a separate sheet with every shipment. For many applications, specific procedures must be determined. All surfaces to which coatings are to be applied should be clean, dry and free from grease or oil. Metal or other smooth surfaces may require surface roughening to ensure best adherence. Roughened or porous surfaces normally do not require further preparation.

FEATURES AND BENEFITS

- Ready to use, water based, completely inorganic coatings for easy application
- Excellent parting plane and lubricity provide outstanding release properties even at high temperatures
- Non-wet by most molten metals, salts, fluxes enables extreme resistant to molten metal corrosion and light metal drosses
- Increases corrosion resistance and lifetime of graphite and non-oxide refractory components and tools
- Green-tinted coating is visible on white refractory for easy detection of reapplication.

KEY APPLICATIONS

- Hot pressing, forging, extrusion
- Coating of launders, troughs, spoons, sieves, cups
- Super-plastic and quick-plastic forging

TARGET MARKETS

- Light metal processing
- Secondary aluminium manufacturing
- Glass manufacturing

BORON NITRIDE COATINGS

GENERAL PROPERTIES	Type Sf/ Sfg	Type 10Sf/ 10Sfg	Type A	Type V
% Boron Nitride	23	10	39	31
Carrier Liquid	Water	Water	Water	Water
Binder Phase	Al ₂ O ₃	Al ₂ O ₃	Aluminium Phosphate	Magnesium Silicate
pH	6.0 - 8.0	6.0 - 8.0	1.0 - 3.0	>7.5
Viscosity (cps)	15,000- 60,000	500 - 6,000	50,000 - 200,000	3,000 - 12,000
Specific Gravity (g/cc)	1.21	1	1	1
Color	White/Green	White/Green	White	White
Coverage, Ft ² /gallon	100- 400	100- 400	100- 400	100- 400
Shelf Life at RT, Months	12+	12+	12+	12+
Coating Composition				
Total % solid Phase	31/36	16/21	55	33
Boron Nitride	73/71	63/61	72	94
Binder Phase	27/24	37/34	28	6
Total % Liquid Phase	69/64	84/79	45	67
Pigment	0/<5	0/<5	--	--
Use-Temperature				
Reducing/Inert	1370°C	1370°C	1370°C	1370°C
Oxidizing	850°C	850°C	850°C	850°C

AVAILABLE CONTAINER SIZES

Liquid coatings are available in 4-gallon cartons and 24-gallon crates. Once a container is opened, it should be used immediately. Shelf life for unopened containers at room temperature is minimum 12 months.