

## MS-153A / 153 Boron Nitride Release Agent

### Description

Miller-Stephenson has developed a high-temperature release agent / dry lubricant utilizing fine particle hexagonal boron nitride in nonflammable formulation. Boron nitride is a white ceramic particle that has a low coefficient of friction, is naturally lubricious and stable at elevated temperatures and in aggressive environments. The inert and non-wetting nature of the boron nitride particles make it an excellent surface coating for molds used to produce castings of light metals such as magnesium and for coating surfaces in glass making operations. Boron Nitride can inhibit corrosion and chemical attack in metal forming, glass-making and sintering processes, thereby increasing die life and improving product quality. Benefits include:

- High Temperature Stability up to 1562°F (850°C) in air; 3272°F (1800°C) in Inert Atmospheres
- Low Dielectric Constant and Loss (ideal for MAG/MIG welding nozzles coating)
- Excellent Thermal conductivity
- Low coefficient of friction
- 100% nonflammable formulation

### Applications

- Mold Release for High Temperature and Difficult to Mold Polymers and Composites
- Mold release for Casting Metals
- Mold Dressing for Powder Metal Processing
- Surface Coating for High Temperature Surfaces
- Barrier Coating for Aggressive Environmental processes
- Specialty Lubricant for Drawing and Working Metals
- High and Low Temperature Dry Film Lubricant

### Recommended Application Procedure

1. Clean surface thoroughly. Mechanical cleaning such as bead media blasting or steel wool, followed by chemical cleaning, provides the best surface for application of Boron Nitride. Removal of all previous contaminants is critical.
2. Shake can vigorously for one minute, or agitate bulk to uniformly disperse Boron Nitride in the solution. Apply approximately 6-8 inches away from surface, and apply a light coat. NOTE: Material will apply wet and transparent, but will dry to a fine-white coat.
3. Allow solvent to dry completely. If molding, heat mold to operational temperatures (>500° C) to allow boron nitride to adhere to surface. Apply 1-3 coats and repeat heat cycle to maximize release performance. If using as a dry lubricant or barrier, allow solvent to dry and then apply 1 additional coat to guarantee uniform coverage.

### Physical Properties:

Primary Polymer:.....Discrete Ceramic particle  
Appearance:.....White particle suspension  
Odor:.....Slight  
Specific Gravity:.....1.3 g/mL @ 25°C

**Safety Data Sheets (SDSs) are available upon request.**

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