3M™ Boron Nitride Sprays Release Agent and Protective Coating

3M™ Boron Nitride Sprays are ethanolic coatings based on hexagonal boron nitride and various binder systems.

Advantages

Boron nitride’s properties:
• Chemical resistance
• Electrical insulation
• High temperature resistance
• Non-wettability
• Lubricity
• Separation effect
• Non-toxic
• Environmental

enable use in the following applications:
• Aluminum extrusion
• Foundry industry
• Glass industry
• Welding and brazing
• Sinter metallurgy
• High-temperature furnaces

Processing

All sprays can be applied directly from the spray can.
• Ensure good ventilation during application
• Parts to be coated should be clean, dry and grease-free and free of paint and varnish residues
• Cracking is prevented by thin layers
• Do not apply to red-hot surfaces under any circumstance
• Drying is complete when no ethanol odor is perceptible
• Light increase in temperature to 40 – 60 °C reduces drying time
• Baking is not required
• Dried layer can be polished with a smooth cloth
• Equipment and instruments can be cleaned with water

Said processing instructions are to be considered as information only, i.e. discrepancies may arise depending on application.

Typical properties

<table>
<thead>
<tr>
<th>Application</th>
<th>EP</th>
<th>TG</th>
<th>Extrusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum extrusion</td>
<td>++</td>
<td>+</td>
<td>+++</td>
</tr>
<tr>
<td>Foundry industry</td>
<td>+++</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Glass industry</td>
<td>++</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Welding and brazing</td>
<td>++</td>
<td>+++</td>
<td>+</td>
</tr>
<tr>
<td>Sinter metallurgy</td>
<td>+++</td>
<td>-</td>
<td>+</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Technical data</th>
<th>EP</th>
<th>TG</th>
<th>Extrusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>white</td>
<td>white</td>
<td>white</td>
</tr>
<tr>
<td>Solids content (BN)*</td>
<td>&lt; 15%</td>
<td>&lt; 7%</td>
<td>&gt; 25%</td>
</tr>
<tr>
<td>Solvent</td>
<td>ethanol</td>
<td>ethanol</td>
<td>ethanol</td>
</tr>
<tr>
<td>Binder</td>
<td>inorganic</td>
<td>organic**</td>
<td>inorganic</td>
</tr>
<tr>
<td>Density</td>
<td>1.0 g/cm³</td>
<td>1.0 g/cm³</td>
<td>1.0 g/cm³</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>900 °C air</td>
<td>900 °C air**</td>
<td>900 °C air</td>
</tr>
<tr>
<td></td>
<td>1,400 °C vacuum***</td>
<td>1,400 °C vacuum**</td>
<td>1,400 °C vacuum</td>
</tr>
<tr>
<td>Density of layer</td>
<td>++</td>
<td>+++</td>
<td>+</td>
</tr>
<tr>
<td>Drying velocity</td>
<td>+</td>
<td>+</td>
<td>+++</td>
</tr>
<tr>
<td>Adhesion</td>
<td>+++</td>
<td>+++</td>
<td>++</td>
</tr>
</tbody>
</table>

* non-aerosol content
** binder decomposes at > 250 °C
*** must not be used on carbon surfaces and reducing atmosphere
Storage
- Containers must be tightly closed and protected from heat
- Guidelines for the storage of flammable liquids must be followed
- Keep cool and dry
- Protect from frost

Packaging
- 500 ml spray can

Safety
Because of the ethanol content, this product is highly flammable and thus a hazardous substance in terms of the Ordinance on Hazardous Substances.

The processing regulations and safety measures applicable to dealing with flammable liquids must be strictly followed.

For more information see the DIN Safety Data Sheet.