

# 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 enable:

- Chemical resistance
- Electrical insulation
- High temperature resistance
- Non-wettability
- Lubricity
- Separation effect
- Non-toxic
- Environmental

use in the following applications:

- Aluminum Extrusion
- Foundry Industry
- Glass Industry
- Welding and Brazing
- Sinter Metallurgy
- High-temperature Furnaces

Application recommendations			
	3M™ Boron Nitride Sprays		
	EP	TG	Extrusion
Aluminum Extrusion	+	+	+++
Foundry Industry	+++	-	+
Glass Industry	++	-	+
Welding and Brazing	++	+++	+
Sinter Metallurgy	+++	-	+

## 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			
	3M™ Boron Nitride Sprays		
Technical Data	EP	TG	Extrusion
Color	white	white	white
Solids content (BN) *	< 15 %	< 7 %	> 25 %
Solvent	ethanol	ethanol	ethanol
Binder	inorganic	organic**	inorganic
Density	1.0 g/cm <sup>3</sup>	1.0 g/cm <sup>3</sup>	1.0 g/cm <sup>3</sup>
Operating temperature	900 °C air	900 °C air**	900 °C air
	1,400 °C vacuum***	1,400 °C vacuum**	1,400 °C vacuum
Density of layer	++	+++	+
Drying velocity	+	+	+++
Adhesion	+++	+++	++

\* 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 protect 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.

**Product is manufactured and sold by ESK Ceramics GmbH & Co. KG, a 3M company.**

**Warranty and Limitation of Liability:** Many factors beyond our control and uniquely within user's knowledge and control can affect the use and performance of the product in a particular application. User is solely responsible for evaluating the product and determining whether it is fit for a particular purpose and suitable for user's method of application. User is solely responsible for evaluating third party intellectual property rights and for ensuring that user's use of the product does not violate any third party intellectual property rights. Unless a different warranty is specifically stated in the applicable product literature or packaging insert, we warrant that each product meets the applicable product specification at the time we ship the product.

WE MAKE NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY OF NON-INFRINGEMENT OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF DEALING, CUSTOM OR USAGE OF TRADE.

The quality of our products is warranted under our General Terms and Conditions of Sale as now are or hereafter may be in force.

**Limitation of Liability:** Except where prohibited by law, we will not be liable for any loss or damages arising from the product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including warranty, contract, negligence or strict liability. We accept liability for intent and gross negligence. We are also liable for any culpable breach of major contractual obligations; however, if a breach of major contractual obligations is due to negligence, our liability is limited to the foreseeable damage associated with this type of contract. This does not affect our liability for culpable fatal or bodily injury or damage to health; this also applies to liability under the Product Liability Act („Produkthaftungsgesetz“). Other claims for compensation are excluded.

**Technical Information:** Technical information, recommendations, and other statements contained in this document or provided by us are based on tests or experience that we believe are reliable, but the accuracy or completeness of such information is not guaranteed. Such information is intended for persons with knowledge and technical skills sufficient to assess and apply their own informed judgment to the information. No license under any of our or third party intellectual property rights is granted or implied with this information.



### ESK Ceramics GmbH & Co. KG, a 3M company

Max-Schaidhauf-Straße 25  
 87437 Kempten, Germany  
 T +49 (0)831 5618-0  
 F +49 (0)831 5618-345  
 info.esk@mmm.com  
 www.esk.com

The management system has been certified according to DIN EN ISO 9001, DIN EN ISO 50001, DIN EN ISO 14001.

Please recycle. Printed in Germany.  
 © 3M 2014. All rights reserved.  
 Issued: 02/14

3M is a trademark of 3M.  
 Used under license by  
 3M subsidiaries and affiliates.