Polyethylene
Borcoat™ HE3450-H

High Density Polyethylene for Steel Pipe Coating

Description

Borcoat HE3450-H is a bimodal, high density polyethylene compound and is coloured black

Borcoat HE3450-H contains finely dispersed carbon black that helps to impart excellent weathering properties.

Applications

Borcoat HE3450-H is recommended as a top coat for a three layer PE system used in:

Steel Pipe Coating

Borcoat HE3450-H is produced using advanced Borstar® technology that provides the material with good melt strength and extrudability, as well as superior mechanical properties at both low and high temperatures and very good ESCR.

Specifications

Borcoat HE3450-H is intended to fulfill following National and International standards, when appropriate industrial manufacturing standard procedures are applied and a continuous quality system is implemented and when used in combination with Borcoat ME0420 or Borcoat ME0433 and a compatible powder epoxy.

NF A49710
DIN 30670S
CAN/CSA-Z245.21
ISO FDIS 21809-1

Special features

Borcoat HE3450-H is suitable for severe lay conditions especially at elevated ambient temperatures, also where the pipeline needs to be protected during transport, handling and storage in hot climates and difficult terrain. High processing speeds and a reduction in layer thickness may be possible under certain conditions. Operating temperatures for buried pipelines up to 90oC are possible when used in a correctly composed and applied system.

Physical Properties

Property	Typical Value Data should not be used for specification work	Test Method
Density (Base Resin)	951 kg/m3	ISO 1872-2/ISO 1183
Density (Compound)	961 kg/m3	ISO 1872-2/ISO 1183
Melt Flow Rate (190 °C/2,16 kg)	0,7 g/10min	ISO 1133
Melt Flow Rate (190 °C/5,0 kg)	2,9 g/10min	ISO 1133
Tensile Strain at Break	> 600 %	ASTM D 638
Tensile Strength	> 25 MPa	ASTM D 638
Carbon black content	2 %	ASTM D 1603
Melting temperature	129 °C	ISO 3146
Vicat softening temperature A50,	124 °C	ISO 306
Environmental Stress Crack Resistance (Igepal 10 %), (F20)	> 5.000 h	ASTM D 1693-A
Hardness, Shore D (15 s)	62	ASTM D 2240

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Electrical Properties

Property	Typical Value Data should not be used for specification work	Test Method
Volume Resistivity	10 Ohm.cm	ASTM D 257
Dielectric Strength	> 30 kV/mm	IEC 243

Processing Techniques

Due to the hygroscopic nature of carbon black, this compound is sensitive to moisture. Storage for a long time or under unfavourable conditions will increase the moisture content. For normal conditions and applications we suggest preheating and drying with a maximum preheat temperature of 90°C. More specific recommendations for processing can only be determined when the application and type of equipment are known. Please contact your local Borealis representative for such particulars.

Borcoat HE3450-H can be applied by flat die or crosshead extrusion. The actual extrusion conditions will depend on the type of equipment used. The following conditions may be used as a guide when starting up the extruder.

Cylinder	190 - 210 °C	
Head	190 - 210 °C	
Die	190 - 210 °C	
Melt temperature range	200 - 230 °C	
Melt temperature	< 250 °C	Maximum

Specific recommendations for processing conditions can be determined only when the application and type of equipment are known. Please contact your local Borealis representative for such particulars.

Storage

Borcoat HE3450-H should be stored in dry conditions at temperatures below 50°C and protected from UV-light. Improper storage can initiate degradation, which results in odour generation and colour changes and can have negative effects on the physical properties of this product.

Safety

The product is not classified as dangerous.

Recycling

The product is suitable for recycling using modern methods of shredding and cleaning. In-house production waste should be kept clean to facilitate direct recycling.

Please see our "Safety data sheet" / "Product safety information sheet" for details on various aspects of safety, recovery and disposal of the product. For more information, contact your Borealis representative.

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Related Documents

The following related documents are available on request, and represent various aspects on the usability, safety, recovery and disposal of the product.

Recovery and disposal of polyolefins
Information on emissions from processing and fires
"Safety data sheet" / "Product safety information sheet"

Disclaimer

The product(s) mentioned herein are not intended to be used for medical, pharmaceutical or healthcare applications and we do not support their use for such applications.

To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication, however we do not assume any liability whatsoever for the accuracy and completeness of such information.

Borealis makes no warranties which extend beyond the description contained herein. Nothing herein shall constitute any warranty of merchantability or fitness for a particular purpose.

It is the customer's responsibility to inspect and test our products in order to satisfy itself as to the suitability of the products for the customer's particular purpose. The customer is responsible for the appropriate, safe and legal use, processing and handling of our products.

No liability can be accepted in respect of the use of Borealis' products in conjunction with other materials. The information contained herein relates exclusively to our products when not used in conjunction with any third party materials.

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