Polyethylene
Borcoat™ HE3453

High Density Polyethylene for Steel Pipe Coating

Description

Borcoat HE3453 is a bimodal, high density polyethylene compound and is supplied unpigmented.

Borcoat HE3453 is supplied with a specifically designed UV and thermal stabilisation package. The addition of a suitable colour masterbatch is required prior to extrusion

Applications

Borcoat HE3453 is recommended as a top coat for a three layer PE system used in:

Steel Pipe Coating

Borcoat HE3453 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 HE3453 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 ME0420 or ME0433 and a compatible powder epoxy.

NFA 49710
DIN 30670S
CAN/CSA-Z245.21
Draft ISO 21809-1

Special features

Borcoat HE3453 is suitable for severe lay conditions at low or elevated ambient temperatures. High processing speeds and a reduction in layer thickness may be possible under certain conditions. Operating temperatures up to 90°C 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)	942 kg/m3	ISO 1872-2/ISO 1183
Melt Flow Rate (190 °C/5,0 kg)	2,0 g/10min	ISO 1133
Tensile Strain at Break	> 600 %	ASTM D 638
Tensile Strength	> 26 MPa	ASTM D 638
Melting temperature (DSC)	128 °C	ISO 3146
Vicat softening temperature A50, (10 N)	120 °C	ISO 306
Brittleness temperature	< -82 °C	ASTM D 746
Environmental Stress Crack Resistance (Igepal 10 %), (F20),	> 5.000 hh	IEC 60811-4-1/B
Environmental Stress Crack Resistance (Igepal 10 %),	> 5.000 hh	ASTM D 1693-A

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(F20), Hardness, Shore D	60	ASTM D 2240

Electrical Properties

Property	Typical Value Data should not be used for specification work	Test Method
Volume Resistivity	10 Ohm.cm	IEC 60093
Dielectric Strength	> 30 kV/mm	IEC 60243

Processing Techniques
The actual conditions will depend on the type of equipment used.

Extrusion
Borcoat HE3453 can be applied by flat die or crosshead extrusion. The actual extrusion conditions will depend on the type of equipment used.

Cylinder	190 - 210 °C	
Head	190 - 210 °C	
Die	190 - 210 °C	
Melt temperature	220 - 240 °C	
Melt temperature	< 260 °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 HE3453 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 a dangerous preparation.

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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 for details on various aspects of safety, recovery and disposal of the product, for more information contact your Borealis representative.

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

Recovery and disposal of polyolefins
Information on emissions from processing and fires
Safety Data 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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