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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 fulfil 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 A49-710
DIN 30670S

CAN/CSA-Z245.21
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 80°C are possible when used in a correctly composed and applied system.

Physical Properties

Property	Typical Value	Test Method
Data should not be used for specification work		
Density	940 kg/m ³	ISO 1183-1, Method A
Melt Flow Rate (190 °C/5,0 kg)	2,0 g/10min	ISO 1133
Melt Flow Rate (190 °C/2,16 kg)	0,5 g/10min	ISO 1133
Tensile Strain at Break	> 600 %	ISO 527
Tensile Stress at Yield	> 15 MPa	ISO 527
Tensile Stress at Break	> 26 MPa	ISO 527
Melting temperature (DSC)	128 °C	ISO 11357-3
Oxidation Induction Time (210 °C),	> 30 min	ISO 11357-6
Vicat softening temperature A50, (10 N)	115 °C	ISO 306
Brittleness temperature	< -80 °C	ASTM D 746

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Environmental Stress Crack Resistance (, Igepal 10 %, F0)	> 5.000 h	ASTM D 1693 Cond A and B
Hardness, Shore D (1 s)	60	ISO 868
Moisture	<= 500 ppm	ISO 15512

Electrical Properties

Property	Typical Value	Test Method
Data should not be used for specification work		
Volume Resistivity	$1 \cdot 10^{16} \Omega\text{cm}$	ASTM D 257

Other properties

Property	Typical Value	Test Method
Data should not be used for specification work		
UV and thermal ageing (ΔMFR)	<= 35 %	ISO 21809-1

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 shall be stored indoors below 50°C in unopened original packaging in clean and dry environment. It is recommended to ensure proper stock rotation by using first in – first out principle. Following afore-mentioned conditions the material can safely be stored for a period of up to 3 years after production. However, caution shall be taken regarding the moisture level. It is recommended to measure the moisture after longer storage periods prior to processing.

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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.

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" / "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 any Borealis product in conjunction with any other products and/or materials. The information contained herein relates exclusively to our products when not used in conjunction with any other material unless as specifically provided for in the test methods stated above.

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