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Polyethylene

# Borstar® HE6063

Natural Bimodal High Density Polyethylene Jacketing Compound for Energy and Communication Cables

## Description

**Borstar HE6063** is a natural, UV-stabilised, colourable, bimodal high density (HD) jacketing compound, which is produced with the Borealis proprietary Borstar bimodal process technology.

Borstar technology allows the manufacturing of polymers outside the traditional MFR and density range making it possible to optimize processability, reduce shrinkage and yet provide excellent physical toughness and environmental stress crack resistance (ESCR).

Borstar HE6063 contains a well dispersed UV-stabiliser in sufficient amount providing a measure of weathering resistance. In order to fully utilise the unique low shrink properties of Borstar HE6063 we recommend the use of non-warping colour masterbatches.

## Applications

**Borstar HE6063** is designed for:

Jacket for energy and communication cables

The physical toughness and very low water permeability of the compound make it an ideal solution especially for buried power cables. Borstar HE6063 offers a balance of properties giving advantages in manufacturing, installation and lifetime performance of communication and energy cables.

## Specifications

**Borstar HE6063** meets the applicable requirements as below when processed using sound extrusion practice and testing procedure:

ASTM D 1248 Type III, Class A, Category 4, Grade E9, J5  
BS 6234: Type H03, TS2  
DIN 57818/VDE 0818  
EN 50290-2-24  
HD 620 S1, Part 1, table 4B, DMP 5, 13, 16

IEC 60502, Type ST7  
IEC 60840, Type ST7  
ISO 1872-PE, KHLN, 45 D-006  
NF C32-060

## Special features

**Borstar HE6063** consists of specially selected components to offer:

Superior processability  
Excellent environmental stress cracking resistance (ESCR)  
Excellent abrasion & scratch resistance  
Low water permeability  
Low heat deformation

Good petroleum-jelly resistance  
Termite resistance  
Very good UV resistance  
Low shrinkage  
Excellent surface hardness

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## Physical Properties

Property	Typical Value	Test Method
Data should not be used for specification work		
Density (Base Resin)	946 kg/m <sup>3</sup>	ISO 1872-2/ISO 1183
Melt Flow Rate (190 °C/2,16 kg)	0,5 g/10min	ISO 1133
Melt Flow Rate (190 °C/5,0 kg)	2,0 g/10min	ISO 1133
Flexural Modulus	850 MPa	ASTM D 790
Tensile Strain at Break (50 mm/min)	900 %	ISO 527
Tensile Strength (50 mm/min)	35 MPa	ISO 527
Brittleness temperature	< -76 °C	ASTM D 746
Environmental Stress Crack Resistance (50 °C) (Igepal 10 %), (F0),	> 5.000 h	IEC 60811-4-1/B
Hardness, Shore D ( 1 s)	61	ISO 868
Hardness, Shore D ( 3 s)	60	DIN 53505
Pressure Test at High Temperature (115 °C, 6 h)	< 10 %	IEC 60811-3-1

## Electrical Properties

Property	Typical Value	Test Method
Data should not be used for specification work		
DC Volume Resistivity	10 POhm.cm	IEC 60093
Dielectric Strength	70 kV/mm	IEC 60243

## Processing Techniques

Borstar HE6063 provides excellent surface finish and allows a broad processing window. For extrusion standard PE-screws are recommended, but also screws designed for PVC can be used with good result. To minimise shrink back gradient cooling with hot water, minimum 60°C in the first part of the cooling trough, is strongly recommended.

If preheating and/or drying is used, the maximum temperature should be 90°C.

Preheating	90 °C	Maximum recommended temperature
Melt temperature	180 - 190 °C	
Cooling water	60 °C	First part of cooling trough Minimum Temperature

## Packaging

Package:	Bulk Octabins Bags
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## Safety

The product is not classified as a dangerous preparation and is intended for industrial use only. Check and follow local codes and regulations!

Please see our Safety Data Sheet for details on various aspects of safety of the product, for more information contact your Borealis representative.

## 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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