PRODUCT DATA SHEET

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Polyethylene

Borstar® HE6063

High Density Polyethylene Compound for Cable Jacketing

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 shink properties of Borstar HE6063 we recommend the use of non-warping colour masterbatches.

Typical characteristics

Borstar HE6063 can be described with following typical characteristics:

Superior processability	Good petroleum-jelly resistance
Excellent environmental stress cracking resistance (ESCR)	Termite resistance
Excellent abrasion & scratch resistance	Very good UV resistance
Low water permeability	Low shrinkage
Low heat deformation	Excellent surface hardness

Applications

Borstar® HE6063 is intended for following applications:

Jackets 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. Borstar HE6063 also provides good track resistance for overhead cables.

Specifications

Borstar HE6063 is expected to meet the applicable requirements included in the below mentioned standards provided it is processed using sound material handling and processing practices as well as appropriate testing procedures.

ASTM D1248 Type III, Class A, Category 4, Grade E9, J5	HD 620 S2 Part 1, table 4B, DMP 5, 13, 16, 18
DIN VDE 0818	IEC 60794
EN 187105	IEC 60840 Type ST7
EN 50290-2-24	IEC 60502, Part 2, Type ST8
HD 603 S1 DMP 6	NBR11873 and NBR10296 (until 4kV)

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Physical properties

Property	Typical value *	Unit	Test method
Density	946	kg/m³	ISO 1183-1
Flexural modulus	900	MPa	ISO 178
Melt flow rate (190 °C/2.16 kg)	0.5	g/10min	ISO 1133-1
Melt flow rate (190 °C/5 kg)	2	g/10min	ISO 1133-1
Tensile strain at break (50 mm/min)	> 700	%	ISO 527-2
Tensile strength (50 mm/min)	> 25	MPa	ISO 527-2
Low temperature brittleness [1]	0	pieces	ASTM D746
Environmental stress crack resistance (50°C, Igepal 10%, F0)	> 5000	h	IEC 60811-406
Shore-D 1s	61	-	ISO 868
Pressure test at high temperature (115 °C, 6h)	< 10	%	IEC 60811-508

* Data should not be used for specification work

[1] *F0, measured at -76°C*

Electrical properties

Property	Typical value *	Unit	Test method
DC volume resistivity	>10	P&cm	IEC 62631-3
Dielectrical strength	> 20	kV/mm	IEC 60243

* Data should not be used for specification work

Processing setting	Typical value/range
Preheating temperature [2]	90 °C
Melt temperature	180 - 190 °C
Cooling water temperature [3]	60 °C

[2] *Maximum recommended temperature*

[3] *First part of cooling trough temperature*

Please contact your local Borealis representative for specific assistance.

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 minimize shrink back gradient cooling with hot water, minimum 60ºC in the first part of the cooling trough, is strongly recommended.

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

Packaging and storage

Package: Bulk, Octabins, Bags

Borstar HE6063 has a shelf life of 24 months from production date if stored in unopened original packages, under dry and clean conditions at temperatures between 10 - 30 °C (50 - 85 °F). Material shelf life is affected by the storage conditions and extreme conditions influence the general material quality and performance. It is also recommended to ensure proper stock rotation by First In First Out principle.

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Product compliance documents

Latest versions of product safety information sheets (PSIS), product safety data sheets (SDS) and other product liability documents are available in our website www.borealisgroup.com.

Sustainability aspects

Borealis is ever mindful of the impact of our products on the planet. We promote Design for Circularity (DfC) and Design for Recycling (DfR) to conserve natural resources and to reduce the environmental impact of products over their entire lifetime (including production, use phase and after phase). DfR helps ensure that material can be effectively recycled while maximizing the material performance efficiency. Further information on sustainability and Design for Recycling (DfR) can be found from our websites www.borealisgroup.com and www.borealiseverminds.com.

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.
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