PRODUCT DATA SHEET

28.05.2025 Ed.8

Polyethylene

Borstar® LE8706

Linear Low Density Polyethylene Compound for Cable Jacketing

Description

Borstar LE8706 is a natural colourable linear low density (LLD) 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 LE8706 contains a well dispersed UV-stabilizer in sufficient amount providing a measure of weathering resistance.

Typical characteristics

Borstar LE8706 can be described with following typical characteristics:

- Superior processability
- Excellent environmental stress cracking resistance (ESCR)
- Low deformation resistance
- Low coefficient of friction
- Low water permeability
- Good petroleum-jelly resistance
- Very good UV resistance
- Low shrinkage

Applications

Borstar® LE8706 is intended for following applications:

Jackets for energy and communication cables

The abrasion resistance combined with low coefficient of friction makes it ideally suitable for the jacketing of energy and communication cables. Borstar LE8706 offers a balance of properties giving advantages in manufacturing, installation and lifetime performance of communication and energy cables.

Specifications

Borstar LE8706 and/or articles produced from it, are 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 I, Class A, Category 4, Grade E4, E5, J3
- EN 50290-2-24
- HD 603 S1 DMP 6
- HD 620 S2 Part 1, table 4B, DMP 5, 13, 16, 18
- IEC 60502 Part 2, Type ST7
- IEC 60840 Type ST7
- IEC 60794-1-22

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Physical properties

Property	Typical value *	Unit	Test method
Density	923	kg/m³	ISO 1183-1
Melt flow rate (190 °C/2.16 kg)	0.85	g/10min	ISO 1133-1
Flexural modulus	400	MPa	ISO 178
Tensile strain at break (25 mm/min)	> 600	%	ISO 527-2
Tensile strength (25 mm/min)	> 26	MPa	ISO 527-2
Low temperature brittleness [1]	0	pieces	ASTM D746
Environmental stress crack resistance (50°C, Igepal 10%, F0) [2]	> 5000	h	IEC 60811-406
Shore-D 1s	52	-	ISO 868
Pressure test at high temperature (115 °C, 6h)	< 15	%	IEC 60811-508

* Data should not be used for specification work

[1] *F0, measured at -76ºC*
[2] *No crack*

Electrical properties

Property	Typical value *	Unit	Test method
DC Volume resistivity	> 10	PΩcm	IEC 62631-3
Dielectrical strength	> 20	kV/mm	IEC 60243
Dielectric constant (1 MHz)	2.3	-	IEC 60250
Dissipation factor (1 MHz)	0.00015	-	IEC 60250

* Data should not be used for specification work

Processing techniques

Borstar LE8706 provides excellent surface finish and allows a broad processing window. Standard PE-screw gives satisfactory results but also low compression screws can be used successfully. If preheating and/or drying is used, the maximum temperature should be 90ºC. To minimize shrink back gradient cooling with hot water, minimum 60ºC in the first part of the cooling trough, is strongly recommended.
In order to fully utilize the unique low shrink properties of Borstar LE8706 we recommend the use of non-warping color masterbatches.

Processing setting	Typical value/range
Drying temperature	90 °C
Preheating temperature[3]	90 °C
Feed section temperature	150 °C
Metering section temperature	170 °C
Die head temperature	190 °C

[3] *Maximum temperature*

Please contact your local Borealis representative for specific assistance.

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Packaging and storage

Package: Bulk, Octabins, Bags

Borstar® LE8706 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."

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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