PRODUCT DATA SHEET

28.05.2025 Ed.8

Polyethylene

Borstar® LE8707

Linear Low Density Polyethylene Compound for Cable Jacketing

Description

Borstar LE8707 is a black 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 LE8707 contains 2.6% well-dispersed carbon black in order to ensure excellent weathering resistance.

Typical characteristics

Borstar LE8707 can be described with following typical characteristics:

- Superior processability
- Excellent environmental stress cracking resistance (ESCR)
- Rather low heat deformation
- Low coefficient of friction
- Low water permeability
- Good petroleum-jelly resistance
- Outstanding UV resistance
- Low shrinkage

Applications

Borstar® LE8707 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 LE8707 offers a balance of properties giving advantages in manufacturing, installation and lifetime performance of communication and energy cables.

Specifications

Borstar LE8707 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.

- AEIC CS8
- ANSI/ICEA S-93-639
- ANSI/ICEA S-94-649
- ANSI/ICEA S-97-682
- ASTM D1248 Type I, Class C, Category 4, Grade E4, E5, J3, W2-4
- EN 187105
- EN 50290-2-24
- EN 50407
- HD 603 S1 DMP 5, 7, 8
- HD 620 S2 DMP 9, 10, 12, 14, 15, 17
- HD 632 S2, ST3, ST7
- ICEA S-93-639
- IEC 60502 Part 1, Type ST3, ST7
- IEC 60708
- IEC 60794
- IEC 60840 Type ST3
- IEC 60840 Type ST7
- UL 1072 Oil resistance I & II
- IEC 60794-1-22

Borstar® is a registered trademark of the Borealis Group

Polyethylene

Borstar® LE8707

Physical properties

Property	Typical value *	Unit	Test method
Density	936	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
Base resin density	923	kg/m3	ISO 1183-1
Tensile strain at break （25 mm/min)	> 600	%	ISO 527-2
Tensile strength （25 mm/min)	> 26	MPa	ISO 527-2
Absorption coefficient [1]	> 400	-	ASTM D3349
Low temperature brittleness [2]	0	pieces	ASTM D746
Environmental stress crack resistance （50°C, Igepal 10%, F0)	> 5000	h	IEC 60811-406
Shore-D 1s	54	-	ISO 868
Pressure test at high temperature （115 °C, 6h)	< 15	%	IEC 60811-508

* Data should not be used for specification work

[1] *at 375 nm*
[2] *F0 at -76°C*

Electrical properties

Property	Typical value *	Unit	Test method
DC volume resistivity	> 10	PΩcm	IEC 62631-3
Dielectric strength	> 20	kV/mm	IEC 60243

* Data should not be used for specification work

Processing techniques

Borstar LE8707 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.
To minimize shrink back gradient cooling with hot water, minimum 60ºC in the first part of the cooling trough, is strongly recommended.

Processing setting	Typical value/range
Preheating temperature	90 °C
Drying 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.

Borstar® is a registered trademark of the Borealis Group

Polyethylene

Borstar® LE8707

Packaging and storage

Package: Bulk, Octabins, Bags

Borstar LE8707 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.
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.

Borealis AG | Trabrennstrasse 6-8 | A-1020 Vienna | Austria
Telephone: +43 1 22 400 0* | Fax: +43 1 22 400 333
Website www.borealisgroup.com

Borstar® is a registered trademark of the Borealis Group

Manufacturer website: https://www.borealisgroup.com/