

PRODUCT DATA SHEET

30.01.2024 Ed.4

Polyethylene

Borlink™ LE8280

Crosslinkable Semiconductive Compound

Description

Borlink LE8280 is a crosslinkable black polyethylene compound, specially designed for semiconductive conductor screen and bonded insulation screen of power cables.

Borlink LE8280 is a ready-to-use semiconductive compound. It offers excellent thermal stability which provides robust cable extrusion and crosslinking at high surface temperature, allowing for high line speed. It also provides excellent scorch resistance property. The excellent distribution of carbon black and additives in Borlink LE8280 results in a very smooth semiconductive screen.

Applications

Borlink LE8280 is intended for semiconductive screen of XLPE high voltage (HV) AC cables with rated voltages up to 230 kV (Um = 245 kV). It can be used as conductor and insulation screen for bonded cable constructions and as conductor screen for strippable cable constructions.

The values are voltages between phases as defined in IEC 60183.

Specifications

Borlink LE8280 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.

AEIC CS9 (below 8 kV/mm)

IEC 60840

ANSI/ICEA S-108-720

IEC 62067

DIN VDE 0276-632

While some standards may cover wider voltage ranges, this statement applies up to the maximum recommended voltage level indicated in the "Applications" section.

Physical properties

Property	Typical value *	Unit	Test method
Density	1135	kg/m³	ISO 1183
Tensile strength (25 mm/min) ¹	>15	MPa	ISO 527
Tensile strain at break (25 mm/min) ¹	>150	%	ISO 527
Change of tensile properties after ageing 135°C, 240h	<25	%	IEC 60811-401
Hot set test - Elongation under load (200 °C, 0.40 MPa)	<100	%	IEC 60811-507
Hot set test - Permanent deformation (200 °C, 0.40 MPa)	<10	%	IEC 60811-507
MDR, max torque	12	dNm	ISO 6502
Moisture content	200	ppm	ISO 15512

¹ Measured on crosslinked specimen

* Data should not be used for specification work

Electrical properties

Property	Typical value *	Unit	Test method
DC Volume resistivity (23°C)	<100	Ωcm	ISO 3915
DC Volume resistivity (90°C)	<1000	Ωcm	ISO 3915

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Processing techniques

Borlink LE8280 provides excellent surface finish and outstanding output rates, when processing conditions are optimized for the actual processing equipment and cable dimensions. Optimal conditions may vary according to the equipment used. Hence all material handling should be conducted in closed systems and in clean room conditions. It is recommended that Borlink LE8280 is dried prior to extrusion.

A screen-pack on the extruder is recommended for improved melt homogenisation.
Please contact your Borealis representative for more details.

Typical processing temperature ranges for Borlink LE8280 are shown below:

Processing setting	Typical value/range
Drying temperature ²	60 °C
Melt temperature	120-135 °C

² 4 h with dehumidified air

Packaging and storage

Package: Smallbins, Octabins

Borlink LE8280 has a shelf life of 18 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.

More information on storage is found in the Safety data sheet (SDS) / Product safety information sheet (PSIS) for this product.

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.

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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.

