

Polyethylene

Borlink™ LE0500

Crosslinkable Semiconductive Compound

Description

Borlink LE0500 is a supersmooth crosslinkable black polyethylene compound, specially designed for semiconductive conductor screen and bonded insulation screen of extra high voltage, alternating current (EHV AC) power cables.

Borlink LE0500 is a ready-to-use supersmooth semiconductive compound. It offers excellent thermal stability which provides robust cable extrusion and crosslinking at high surface temperature. The excellent distribution of carbon black and additives in Borlink LE0500 results in a superior smoothness of the semiconductive screen.

Borlink LE0500 is intended for semiconductive screen in XLPE EHV AC cables with rated voltages above 230 kV (Um = 245 kV). The values are voltages between phases as defined in IEC 60183.

Specifications

Borlink LE0500 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 IEC 62067
ANSI/ICEA S-108-720

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

Physical properties

| Property | Typical value * | Unit | Test method |
|--|-----------------|-------------------|---------------|
| Density | 1120 | kg/m ³ | ISO 1183 |
| Tensile strain at break (25 mm/min) ¹ | > 150 | % | ISO 527 |
| Tensile strength (25 mm/min) ¹ | > 15 | MPa | ISO 527 |
| Change of tensile properties After ageing 135 °C, 168h ¹ | < 20 | % | IEC 60811-401 |
| Hot set test - Elongation under load (200 °C, 0.20 MPa) ¹ | < 100 | % | IEC 60811-507 |
| Hot set test - Permanent deformation (200 °C, 0.20 MPa) ¹ | < 10 | % | IEC 60811-507 |
| MDR max | 14 | dNm | ISO 6502 |
| Moisture content ² | < 100 | ppm | ISO 15512 |

* Data should not be used for specification work

¹ Measured on crosslinked specimens

² Measured at time of production

Electrical properties

| Property | Typical value * | Unit | Test method |
|------------------------------|-----------------|------|-------------|
| DC Volume resistivity (23°C) | < 100 | &cm | ISO 3915 |
| DC Volume resistivity (90°C) | < 1000 | Ωcm | ISO 3915 |
| DC Volume resistivity (23°C) | < 100 | &cm | ASTM D991 |

* Data should not be used for specification work

Borlink™ is a trademark of the Borealis Group



Polyethylene

Borlink™ LE0500

Processing techniques

Borlink LE0500 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.

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 LE0500 are shown below:

| Processing setting | Typical value/range |
|---------------------------------|---------------------|
| Drying temperature ³ | 60 °C |
| Melt temperature | 120-135 °C |

³4h with dehumidified air

Packaging and storage

Package: Smallbins

Borlink LE0500 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.

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.