Polyethylene

Borlink™ LE0520

Crosslinkable Semiconductive Compound

Description

Borlink LE0520 is a crosslinkable black polyethylene compound, specially designed for semiconductive strippable insulation shield of power cables.

Applications

Borlink LE0520 is intended for semiconductive strippable insulation shield in medium voltage (MV) AC cables with rated voltages up to 46 kV.

The values are voltages between phases as defined in ICEA S-94-649.

Specifications

Borlink LE0520 is expected to meet the applicable requirements included in the below mentioned standards provided it is processed using sound material handling, extrusion and crosslinking practices as well as appropriate testing procedures. This applies up to the maximum recommended voltage level indicated in "Applications" section above since some standards cover wider voltage ranges.

IEC 60502-2
AEIC CS8
ANSI/ICEA S-93-639
ANSI/ICEA S-94-649
ANSI/ICEA S-97-682
NF C33-226
UL 1072

Special Features

Borlink LE0520 is a ready-to-use semiconductive compound. It provides low strip forces over a broad temperature range when used over Borealis crosslinkable polyethylene insulation compounds. Borlink LE0520 is designed to have reduced deposits in continuous vulcanization tubes.

The excellent distribution of carbon black and additives in Borlink LE0520 results in a smooth semiconductive shield.

Physical Properties

Property	Typical Value Data should not be used for specification work	Test Method
Density (23 °C)	1170 kg/m³	ASTM D 792
Tensile Strain at Break (20 in/min) [1]	280 %	ASTM D 638
Tensile Strength (20 in/min) [1]	13 MPa	ASTM D 638
Tensile Strength (20 in/min) [1]	2,000 psi	ASTM D 638
Tensile Strength Retention (168 h, 136 °C) [1]	> 90 %	ASTM D 638
Tensile Elongation After Ageing (168 h, 136 °C) [1]	> 250 %	ASTM D 638
Brittleness temperature	< -40 °C	ASTM D 746

[1] Measured on crosslinked specimens

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Electrical Properties

Property	Typical Value Data should not be used for specification work	Test Method
DC Volume Resistivity (23 °C)	< 100 Ωcm	ASTM D 991
DC Volume Resistivity (90 °C)	< 550 Ωcm	ASTM D 991

Other properties

Property	Typical Value Data should not be used for specification work	Test Method
Cable Strip Force (90° peel)	9 - 12 lbs/½ inch	Borealis Method
Cable Strip Force (90° peel)	3 - 6 kN/m	AEIC CS8

Processing Techniques

Borlink LE0520 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.

The required extrusion melt temperature range is approximately 240 to 260°F (115 to 125°C). Lower melt temperatures may result in a poorly mixed, uneven extrudate and higher melt temperatures may result in extrudate pre-cure or scorch. The feed section of the extruder should be water cooled. The curing configuration should be carefully controlled, and the maximum cable surface temperature in the curing tube should be maintained below 280ºC (535 ºF). Please contact your Borealis representative for more details.

To produce a good and reliable cable, it is essential to ensure careful and clean handling of semiconductive material. Hence all material handling should preferably be conducted in closed systems.

Extrusion

A screen-pack on the extruder is recommended for improved melt homogenisation. Typical processing temperature ranges for **Borlink LE0520** are shown below:

Melt temperature	115 - 125 °C 240 - 260 °F

Packaging

Package: Smallbins

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Storage

Borlink LE0520 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.

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

Safety

Please see the Safety data sheet (SDS) / Product safety information sheet (PSIS) for details on various aspects of safety, recovery and disposal of the products. For more information, contact your Borealis representative.

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.

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