

## Polyethylene

## Borlink™ LE0511

## Silane Crosslinkable Semiconductive Compound

## Description

Borlink™ LE0511 is a crosslinkable black polyethylene compound, specially designed for semiconductive strippable insulation shield of power cables.

## Applications

Borlink™ LE0511 is intended for following applications:

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

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

Borlink™ LE0511 is expected to meet the applicable requirements included in the above 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.

Borlink™ LE0511 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.  
The excellent distribution of carbon black and additives in Borlink LE0511 results in a smooth semiconductive shield.

## Physical properties

Property	Typical value *	Unit	Test method
Density <sup>1</sup>	1170	kg/m <sup>3</sup>	ASTM D792
Low temperature brittleness <sup>2</sup>	≤5	pieces	ASTM D746
Brittleness temperature <sup>3</sup>	≤-40	°C	ASTM D746
Tensile strength at break <sup>4</sup>	1600	psi	ASTM D638
Retained TS 136°C/7d <sup>4</sup>	≥75	%	ASTM D638
Elongation at break after 136°C/7d <sup>4</sup>	≥100	%	ASTM D638
Tensile strain at break <sup>4</sup>	250	%	ASTM D638

\* Data should not be used for specification work

<sup>1</sup> 23°C

<sup>2</sup> Measured on crosslinked specimens at -40°C

<sup>3</sup> Measured on crosslinked specimens

<sup>4</sup> Measured on crosslinked specimens, 20 in/min

## Electrical properties

Property	Typical value *	Unit	Test method
DC Volume resistivity (23°C) <sup>3</sup>	≤50	Ohm*cm	ASTM D991
DC Volume resistivity (90°C) <sup>3</sup>	≤500	Ohm*cm	ASTM D991

\* Data should not be used for specification work

<sup>3</sup> Measured on crosslinked specimens

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### Other properties

Property	Typical value *	Unit	Test method
Strippability <sup>5</sup>	3 - 6	lbs	Borealis test method
<sup>5</sup> Typical Cable Strip Force (90° peel), per 1/2 inch width			* Data should not be used for specification work

### Processing techniques

Borlink™ LE0511 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 280°C (535 °F). 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 LE0511 are:  
Melt temperature: 240 - 260 °F (115 - 125 °C)

### Packaging and storage

#### Storage

Borlink™ LE0511 has a shelf life of 24 months from production date if stored in unopened original packages, under dry and clean conditions at temperatures between 50 - 85 °F (10 - 30 °C).

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.

#### Packaging

Package: Smallbins

### 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](http://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](http://www.borealisgroup.com) and [www.borealiseverminds.com](http://www.borealiseverminds.com).