## Polyethylene

# Borlink™ LE0594

Crosslinkable Semiconductive Compound

## Description

**Borlink LE0594** is a crosslinkable black polyethylene compound, specially designed for semiconductive conductor shield or bonded insulation shield of power cables.

## Applications

**Borlink LE0594** is intended for semiconductive shields in TR-XLPE medium voltage (MV) AC cables with rated voltages up to 46 kV. It can be used as conductor and insulation shields for bonded cable constructions and as conductor shield for strippable cable constructions.

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

## Specifications

**Borlink LE0594** 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 60840
IEC 60502-2
AEIC CS8
ANSI/ICEA S-93-639
ANSI/ICEA S-94-649
ANSI/ICEA S-97-682
UL 1072

## Special Features

**Borlink LE0594** is a ready-to-use semiconductive compound. Borlink LE0594 provides excellent and consistent adhesion with aluminium conductors to meet stringent shrinkback requirements.

The excellent distribution of carbon black and additives in Borlink LE0594 results in a smooth semiconductive shield.

## Physical Properties

| Property | Typical Value<br>Data should not be used for specification work | Test Method |
|---|---|---|
| Density (23 °C) | 1150 g/cm³ | ASTM D 792 |
| Tensile Strain at Break (20 in/min) [1] | 225 % | ASTM D 638 |
| Tensile Strength (20 in/min) [1] | 2.500 psi | ASTM D 638 |
| Retention of Tensile Properties After Ageing (168 h, 150 °C) [1] | > 75 % | ASTM D 638 |
| Brittleness temperature | < -40 °C | ASTM D 746 |

[1] Measured on crosslinked specimens

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## Electrical Properties

| Property | Typical Value<br>Data should not be used for specification work | Test Method |
|---|---|---|
| DC Volume Resistivity (23 °C) | < 50 Ωcm | ASTM D 991 |
| DC Volume Resistivity (90 °C) | < 500 Ωcm | ASTM D 991 |

## Processing Techniques

**Borlink LE0594** 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 curing configuration should be carefully controlled.

To produce a good and reliable cable, it is essential to ensure careful and clean handling of semiconductive material. Please contact your Borealis representative for more details.

### Pre-drying

It is recommended that **Borlink LE0594** is dried prior to extrusion. Typical drying conditions are shown below:

| | | |
|---|---|---|
| Predrying (4 h) | 60 °C | With dehumidified air |
| | 160 °F | With dehumidified air |

### Extrusion

A screen-pack on the extruder is recommended for improved melt homogenisation. Typical processing temperature ranges for **Borlink LE0594** are shown below:

| | |
|---|---|
| Melt temperature | 115 - 125 °C<br>240 - 260 °F |

## Packaging

Package: Smallbins

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## Storage

**Borlink LE0594** 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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