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PRODUCT DATA SHEET

Polyethylene

Borlink™ LE0504

Crosslinkable Semiconductive Compound

Description

Borlink™ LE0504 is a supersmooth crosslinkable black polyethylene compound, specially designed for semiconductive conductor shield or bonded insulation shield of power cables.

Applications

Borlink™ LE0504 is intended for following applications:

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

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

Borlink™ LE0504 is a ready-to-use semiconductive compound. Borlink™ LE0504 provides excellent and consistent adhesion with aluminium conductors to meet stringent shrinkback requirements.
The excellent distribution of carbon black and additives and type of carbon black in Borlink™ LE0504 results in a smooth semiconductive shield.

Physical properties

Property	Typical value *	Unit	Test method
Density [1]	1130	kg/m³	ASTM D792
Low temperature brittleness [2]	≤5	pieces	ASTM D746
Brittleness temperature [3]	≤-40	°C	ASTM D746
Tensile strength at break [4]	2250	psi	ASTM D638
Retained TS 150°C/7d [4]	≥75	%	ASTM D638
Elongation at break after 150°C/7d [4]	≥100	%	ASTM D638
Tensile strain at break [4]	300	%	ASTM D638

* Data should not be used for specification work

[1] *23°C*
[2] *Measured on crosslinked specimens at -40°C*
[3] *Measured on crosslinked specimens*
[4] *Measured on crosslinked specimens, 20 in/min*

Electrical properties

Property	Typical value *	Unit	Test method
DC Volume resistivity (23°C) [3]	≤50	Ohm*cm	ASTM D991
DC Volume resistivity (90°C) [3]	≤150	Ohm*cm	ASTM D991

* Data should not be used for specification work

[3] *Measured on crosslinked specimens*

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Borlink™ LE0504

Processing techniques

Borlink™ LE0504 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.

Predrying
It is recommended that Borlink™ LE0504 is dried prior to extrusion. Typical drying conditions are:
Predrying (4 h): 140 °F (60 °C) with dehumidified air

Extrusion
A screen-pack on the extruder is recommended for improved melt homogenisation. Typical processing temperature ranges for Borlink™ LE0504 are:
Melt temperature: 240 - 260 °F (115 - 125 °C)

Packaging and storage

Storage
Borlink™ LE0504 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.

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.