PRODUCT DATA SHEET

Polyethylene

Borlink™ LH4201R

Crosslinkable Insulation Compound

Description

Borlink LH4201R is a natural copolymer Water Tree Retardant (WTR) crosslinkable polyethylene (XLPE), based on Supercure technology, and specifically designed for wet and semi-wet/dry submarine inter-array cables, as well as for land cables.

Typical characteristics

Borlink LH4201R can be described with following typical characteristics:

Borlink LH4201R is a ready-to-use natural copolymer compound.
It provides superior electrical performance (copolymer WTR XLPE) meeting the most stringent wet ageing requirements.
It offers excellent scorch resistance and long production runs.
Its cleanliness level is assured through the Borealis Quality Management system.

Applications

Borlink LH4201R is intended for insulation of XLPE medium voltage（MV） AC cables with rated voltages up to 69 kV（Um = 72.5 kV）. The values are voltages between phases as defined in IEC 60183.

Specifications

Borlink LH4201R 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.

DIN VDE 0276-620
GOSTR 55025-2012
HD 620 S2 Part 1
IEC 60502-2
IEC 60840
IEC 63026
UL 1072

This applies up to the maximum recommended voltage level indicated in "Applications" section above since some standards cover wider voltage ranges.

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Physical properties

Property	Typical value *	Unit	Test method
Melt flow rate (190 °C/2.16 kg) [1]	2.8	g/10min	ISO 1133-1
Base resin density	924	kg/m3	ISO 1183-1
Tensile strain at break (250 mm/min) [2]	> 450	%	ISO 527
Tensile strength (250 mm/min) [2]	>17	MPa	ISO 527
Change of tensile properties After ageing 135 °C, 168h [2]	<20	%	IEC 60811-401
Hot set test - Elongation under load (200 °C, 0.20 MPa) [2]	75	%	IEC 60811-507
Hot set test - Permanent deformation (200 °C, 0.20 MPa) [2]	5	%	IEC 60811-507
MDR, max torque	3.1-4.1	dNm	ISO 6502
Methanol wash [3]	<500	ppm	BTM00118
Moisture content [4]	< 200	ppm	ISO 15512

* Data should not be used for specification work

[1] *Without peroxide*
[2] *Measured on crosslinked specimens*
[3] *BTM= Borealis Test Method*
[4] *Measured at time of production*

Electrical properties

Property	Typical value *	Unit	Test method
Dielectric constant (50 Hz)	2.4	-	IEC 60250
DC Volume resistivity (23°C)	>10	PΩcm	IEC 62631
Dissipation factor (50 Hz)	0.0003	-	IEC 60250

* Data should not be used for specification work

Processing techniques

To produce a good and reliable cable, it is essential to ensure careful and very clean handling of the insulation material. Hence all material handling should preferably be conducted in closed systems and in clean room conditions. Please contact your Borealis representative for more details.
A screen-pack on the extruder is recommended for improved melt homogenisation.

Processing setting	Typical value/range
Melt temperature	125 - 135 °C

Packaging and storage

Borlink LH4201R 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 - 35°C (50 - 95°F). The material can be stored at ambient temperature up to 40°C (104°F) for a period up to 6 months provided it is in unopened original packages and under dry and clean conditions. Material shelf life is affected by the storage conditions and extreme conditions influence the general material quality and performance.
Before use, material shall be conditioned indoors (production room) to reach ambient temperature.
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.

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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

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