

PRODUCT DATA SHEET

POLYETHYLENE

Borlink™ LS4201R

CROSSLINKABLE INSULATION COMPOUND

DESCRIPTION

Borlink LS4201R is a crosslinkable natural polyethylene compound based on Supercure technology, specially designed for insulation of power cables.

APPLICATIONS

Borlink LS4201R is intended for insulation of XLPE power cables with maximum operating stress of 4.5kV/mm and rated voltages up to 69kV ($U_m = 72.5kV$). The values are phase to phase voltages as defined in IEC 60183.

SPECIFICATIONS

Borlink LS4201R is expected to meet the applicable requirements included in the below-mentioned standards¹ provided it is processed using sound material handling, extrusion and cross-linking practices as well as appropriate testing procedures.

¹ Up to maximum voltage and stress level stated in Applications where voltage range of standards deviates

| | |
|----------------|--|
| IEC 60502-2 | IEC 60840 |
| ICEA S-108-720 | Cenelec HD 620 S1, Part 1, table 2A, DIX 3 to 14 |
| GB/T 12706 | IS 7098 (Part 2) |
| JB/T 10437 | |

SPECIAL FEATURES

Borlink LS4201R is a ready-to-use natural compound. Thanks to its inherent properties, Borlink LS4201R provides very good electrical performance. It offers excellent scorch resistance and long production runs. Borlink LS4201R cleanliness level is assured through the Borouge quality control system.

PHYSICAL PROPERTIES

| Property | Typical Value* | Test Method |
|---|----------------------------|---------------------|
| Density (Base Resin) | 922kg/m ³ | ISO 1872-2/ISO 1183 |
| Bulk density | 500 - 600kg/m ³ | |
| Melt Flow Rate (190°C/2.16kg) ¹ | 2g/10min | ISO 1133 |
| Tensile Strain at Break (250mm/min) ² | > 450% | ISO 527 |
| Tensile Strength (250mm/min) ² | > 17MPa | ISO 527 |
| Change in Tensile properties after Ageing, (168h, 135°C) ² | < 20% | IEC 60811-401 |
| Hot Set Test, Elongation under load, (200°C, 0.20MPa) | 75% | IEC 60811-507 |
| Hot Set Test, Permanent deformation, (200°C, 0.20MPa) | 5% | IEC 60811-507 |
| MDR, max torque | 2.9 - 3.8dNm | ISO 6502 |
| Methanol Wash ³ | 800ppm | TMB 720 |
| Moisture, Karl Fisher titration | < 200ppm | ISO 15512 |

* Data should not be used for specification work

¹ Base resin

² Measured on crosslinked specimens

³ TMB = Test Method Borouge

ELECTRICAL PROPERTIES

| Property | Typical Value* | Test Method |
|------------------------------|----------------|-------------|
| Dielectric constant (50Hz) | 2.3 | IEC 60250 |
| DC Volume Resistivity (23°C) | > 10PΩcm | IEC 62631 |
| Dissipation factor (50Hz) | 0.0003 | IEC 60520 |

* 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. We recommend the use of screen packs on extruders for all XLPE materials. Please contact your Borouge representative for more details.

Extrusion

Melt temperature 125 -135°C

PACKAGING

Package: Octabins
Smallbins

STORAGE

Borlink LS4201R 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 could be stored at an ambient temperature up to 40°C for up to 6 months in unopened original packaging and under dry and clean conditions. Material shelf life is affected by storage conditions and extreme conditions influence the general material quality and performance. Before use, material shall be conditioned indoors (production room) at the ambient temperature. It is also recommended to ensure proper stock rotation by First In – First Out principles. More information on storage can be found in Safety Data Sheet (SDS) for this product.

SAFETY

The product is not classified as a dangerous preparation.

Please see our Safety Data Sheet (SDS) for details on various aspects of safety; recovery and disposal of the product, for more information contact your Borouge representative.

RECYCLING

The product is suitable for recycling using modern methods of shredding and cleaning. In-house production waste should be kept clean to facilitate direct recycling.

RELATED DOCUMENTS

The following related documents are available on request, and represent various aspects on the

usability, safety, recovery and disposal of the product.
Safety Data Sheet
Statement on chemicals, regulations and standards

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.

Borouge 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 Borouge products in conjunction with other materials. The information contained herein relates exclusively to our products when not used in conjunction with any third party materials.

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