



High Voltage XLPE insulation – Peroxide

- **Description**

ZARLNK™ XL4201 WTR-HV is a cross linkable natural polyethylene compound based on Super cure technology and WATER TREE RETARDANT , specially designed for insulation of power cables. The product is a polyethylene copolymer containing <2% of an ORGANIC PEROXIDE and <1% of a thermal stabilizer. No substance contained in the compound can be classified as hazardous in the stated concentrations.

- **Applications**

ZARLNK™ XL4201 WTR HV is intended for insulation of XLPE High voltage (HV) AC cables with rated voltages up to 150 kV (Um = 170 kV).

The values are voltages between phases as defined in IEC 60183.

- **Specifications**

ZARLNK™ XL4201 WTR HV 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 and WATER TREE RETARDANT (WTR) . This applies up to the maximum recommended voltage level indicated in "Applications" section above since some standards cover wider voltage ranges.

IEC 60840

- **Special Features**

ZARLNK™ XL4201 WTR HV is a ready-to-use natural compound. Thanks to its inherent properties, ZARLNK™ XL4201 WTR HV provides very good electrical performance. It offers excellent scorch resistance and long production runs. ZARLNK™ XL4201 WTR HV cleanliness level is assured through the Plexchem quality management system.



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• Physical Properties

Data should not be used for specification work

Property	Typical Value	Test Method
Density (Base Resin)	0.93 gr/cm ³	ISO 1183
Melt Flow Rate (190°C , 2.16 kg) Base polymer	2.8 gr/10 min	ISO 1133
Elongation at Break (250 mm/min)	>450 %	IEC 60811-401
Tensile Strength (250 mm/min)	17 N/mm ²	IEC 60811-401
Hot set test (200°C , 20N/cm ²) Elongation under load	75%	IEC 60811-507
Permanent Elongation	5%	“
MDR , max torque	2- 3 d.Nm	ISO 6502
Relative Water Tree Growth (RWTG) in 90 days	7 to 8	ASTM D 6097

• Electrical Properties

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Property	Typical Value	Test Method
Dielectric Constant (50Hz)	2.3	IEC60250
DC Volume Resistivity (23°C)	>10 P Ohm.cm	IEC 62631
Dissipation Factor (50 Hz)	0.0003	IEC 60250

• Processibility of Compounds

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.

Extruder

Recommended using a standard PE extruder with a cooling screw

Screw diameter : 120-150mm

Length of screw : 20-25 D

Screw design : Troester or equivalent having the last 2 D as a Maddox mixing zone or with Shear –mix elements to achieve very good thermal mixing and homogenization of the melt. This is important to prevent overheating of the melt.

Screw Temperature 100 (+/- 10° C) Hopper Temperature 50 (+/- 5° C)

- **NOTE:** It is important to keep the melt temperature under 135° C to avoid “scorching”

Depending on the cable type, line speeds, and outputs different melt pressures can be realized. Usual values for the melt pressure are





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- **Packaging**

Package: Octabins

- **Storage**

ZARLNK™ XL4201 WTR - HV 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.