

Technical Data Sheet

BehCross 1510

- Silane Cross-Linkable Polyethylene Compound

Product Description

BehCross 1510 is a natural silane-grafted polyethylene compound that can be processed in combination with its catalyst masterbatch (BehLink 2220) with a ratio of 95:5 in conventional extruders. This product is specially designed for insulation of low voltage wiring and power cables for the range up to 1kV, and meets the requirement of the IEC 60502-1. End-product crosslinking occurs when the material is exposed to moisture. BehCross 1510 is based upon a low-density polyethylene and contains permanent scorch retardant additives which ensure safe processing and gives possibility to use a highly active crosslinking catalyst. This product mainly used in production of appliance wire jacketing, cable jacketing and Insulation.

Properties			
Typical Properties	Test Method	Unit	Value
Physical			
Density	ISO 1183	g/cm ³	0.920±0.004
Melt Flow Index (190°C, 5kg)	ISO 1133	g/10min	2.5±0.5
Mechanical			
Tensile Strength at Yield (50mm/min)	ISO 527	MPa	> 20
Tensile Strength at Break (50mm/min)	ISO 527	MPa	> 700
Thermal (Hot Set Test (200°C,0.2MPa))			
Elongation under load	IEC 60811-2-1	%	max 100
Permanent elongation after cooling	IEC 60811-2-1	%	max 100
Aging Properties after aging (7 days at 135°C)			
Variation of Tensile	IEC 60811-1-2	%	max 20
Variation of Elongation	IEC 60811-1-2	%	max 20
Electrical			
Dielectric Constant (50 Hz)	IEC 60250		< 2.9
Dissipation Factor (50 Hz)	IEC 60250		< 0.00050
DC Volume Resistivity	IEC 60093	Ω.cm	1016
Dielectric Strength	IEC 60243-1	kV/mm	> 22

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Processing Conditions

As a guide, the following temperature profile and other condition is recommended. Single Screw Extruder (Conventional PE Screw, Screw L/D: 20-26) and actual extrusion conditions depend on the screw, die design, and throughput rate.

Hopper Zone	Cylinder (Barrel)	Head/Die Zone
Cooled	130-190 °C	200-220 °C

- Head and tools should be designated allowing streamlined flow and avoiding stagnation of the material.
- It is important that the extruder should not be kept idle for more than 15 minutes when filled with silane grafted polyethylene (BehCross1510) and catalyst masterbatch (BehLink2220) premix.
- In case of line stop longer than 5 minutes; before restarting purge with virgin HDPE (MFI: 0.3g/10 min.)

Cross-linking

These products can be cross-linked by immersion in hot water or exposure to low-pressure steam at a temperature of up to 90 °C. This time period may vary due to the humidity, thickness of insulation, reel size, and temperature. The recommended time to reach a Hot Set elongation value of 100% at different insulation thicknesses is listed here:

- ❖ By immersion in 90 °C hot water, 2-6 hr.
- ❖ By exposure to low-pressure water steam, 6-15 hr.

Insulation thickness (mm)	Time (hr.)
0.7	4
1.8	6

Shelf Life & Storage

Shelf life at proper storage is at least 6 months from the production date. The compound should be used a maximum 3-4 hours after opening packing. Sacks should be stored in dry, closed, and clean conditions at temperatures between 10 - 30 °C and protected from sunlight.

Packaging

It is available in the form of pellets and supplied in aluminum multi-layer bags with a net content of 25 kg.

Safety

BehCross 1510 is classified as a no-dangerous material.

Note

This documentation is made based on our tests and experiments in our R&D center with piled-up experience and knowledge. The values are measured on injection molded test specimens. It is suggested that the information contained in this document can be used for general indication. Therefore, you should not construe it as product specifications, and you should do appropriate tests before you consider your conditions for new applications.