Ddev Plastiks Industries Limited

An ISO 9001:2015 company

TECHNICAL DATA

Silane Grafted XLPE Compound for Track Resistance Cable Insulation Applications: KI – XL - 09 / XL – 10BK

DESCRIPTION :

KI – XL - 09 / XL – 10BK is a combination of KI-XL-09, a Silane Grafted PE compound and a masterbatch, KI-XL-10 BK, which contains catalyst, carbon black, UV stabilizers and antioxidants. The KI-XL-10 BK masterbatch accelerates the moisture-induced crosslinking reaction and imparts track resistance, resistance to degradation by ultraviolet light stability to the final product.

KI – XL - 09 / XL – 10BK is designed for use as a track resistant insulation for the outer layer of Spacer Aerial Cables and as insulation for Partial Insulated Cables. This compound is suitable as insulation for cables rated at voltages up to 33KV.

Such system allows the compound to be extruded as a normal thermoplastic in a conventional PE (or even PVC) extrusion line, thus obviating the need of an expensive continuous vulcanizing (CV) extrusion line. The cross-linking step is subsequently carried out by immersion in hot water, or exposure to steam. In both cases, time of curing is to be optimized as a function of thickness of insulation, concentration of catalyst and temperature.

KI-XL09 & XL10 BK meets requirements as applicable under following standards, when processed using sound extrusion practice and testing procedure;

- IS 7098 Part 2/ IS 10810
- BS 5467, 5468, 6724, 7655
- IEC 60502

TYPICAL PROPERTIES :

A) KI-XL-09

Property	Unit	Typical Value	Test Method
Density	gm / cm^3	0.923	ASTM-D-792
Melt Flow Index (190°C, 2.16 kg)	gm / 10 min	0.5 – 1.0	IS-10810 (Part-23) / ASTM-D-1238
Contamination	No./500 g. granules	<200µ<500µ>500µ 10-3-0	By Optical Control Systems (KIIL)

A) **KI – XL-10 BK**

Property	Unit	Typical Value	Test Method
Density	gm / cm^3	0.970	ASTM-D-792
Melt Flow Index (190°C, 2.16 kg)	gms / 10 min	2.0 - 3.0	ASTM-D-1238

KI – XL - 09 / XL – 10BK Combination

Mixed at 130°C at 90:10 ratio for 3 minutes. Compression-moulded to a sheet of 1.5 mm thickness. Cured by immersion in water at 85°C for 3 hours. Conditioning for 3 hours.

Property	Unit	Typical Value	Test Method
Tensile Strength	MPa	14 - 17	ASTM-D-638
Elongation at break	%	400 - 450	ASTM-D-638
Durometer Hardness	Shore D	51	ASTM D 2240
Hot set at 200 °C Hot Elongation after 15 min. Permanent Set after after 5 min	 % %	 60 – 90 ± 5	 IEC 60811-507 IEC 60811-507
Oven ageing at 121 °C, 168 hours Variation in Tensile Strength Variation in Elongation at Break	 % %	 ± 15 ± 15	 IEC 60811-401 IEC 60811-401
Volume Resistivity @ 25°C	Ohm-cm	1 X 10^{16}	ASTM D 257
Dielectric Strength	kV/mm	≥ 31.5	ASTM-D-149
Track Resistance (2.75 kV, 1 hour)	-	Passes	ASTM-D-2303

PROCESSING GUIDELINES :

It is recommended to dry the catalyst Masterbatch at 60°C in air oven in 4-6 cm layers for 8-12 hours. The Grafted Polymer should never be pre-heated.

The Grafted Polymer and Catalyst Masterbatch should be manually mixed at a ratio 90:10 at room temperature without shearing, just before consumption. Mixing in large quantities should be avoided, since such left over premix cannot be stored and used later.

It is important that extruder should not be kept idle for more that 10 minutes when filled with **KI – XL - 09 / XL – 10 BK** premix.

PACKAGING :

For Export:
550 kgs. paper carton with aluminum foil liner & 40' FCL will take 22 MT.
25 kgs. Moisture barrier multilayer liner bags pelletized & 40' FCL will take 23.4 MT.

For Local:
25 kgs. Moisture barrier multilayer bags.
450/875 kg. paper carton with aluminum foil liner.

STORAGE :

The shelf life of the product is 90 days (In case of Export packaging the shelf life is guaranteed for 180 days instead of 90 days) from the date of production, subject to following conditions:

Storage temperature not generally exceeding 25°C.
Away from direct sunlight and weathering.
Closed and unbroken bags.
Use of compound within 3-4 hours after bags are open.