



# Kkalpana Industries (India) Limited

An ISO 9001:2015 company

## TECHNICAL DATA

**Silane Grafted XLPE Compound for High Voltage Applications :**

**KI – XL - 09 / XL - 10**

### DESCRIPTION :

Grades KI-XL-09 / XL-10 combination is suitable for High Voltage Power Cables (HT) applications, upto 35 KV

KI-XL09 & XL10 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
- NEMA WC 70 & NEMA WC 71

The Sioplas compound (KI-XL09 & XL10) to be extruded as a normal thermoplastic in a PE extrusion line for insulation and suitable semicon compounds in semicon extrusion lines with triple crosshead (three layers in common cross head) and longer water trough for graded cooling, thus obviating the need of an expensive continuous vulcanizing (CCV) extrusion line. The cross-linking of extruded core 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 MB and temperature of water bath or steam.

### TYPICAL PROPERTIES

#### A) KI-XL-09

Property	Unit	Typical Value	Test Method
Density	gm / cm <sup>3</sup>	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)

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## B) KI-XL-09 / XL-10 Combination

Mixed at 130°C at 95:5 ratio for 3 minutes. Compression-moulded to a sheet of 1.5 mm thickness. Cured by immersion in water at 95°C for 3 hours. Conditioning for 3 hours.

Property	Unit	Typical Value	Test Method
Tensile Strength	MPa	14 - 17	IS-10810 Part-7 / ASTM-D-638
Elongation at break	%	400 - 450	IS-10810 Part-7 / ASTM-D-638
Hot set at 200 °C			
a) Hot Elongation after 15 min.	%	60 – 90	IS-10810 Part-30 / IEC 60811-507
b) Permanent Set after after 5 min	%	± 5	
Oven ageing at 135 °C, 168 hours			
a) Variation in Tensile Strength	%	± 15	IS-10810 Part-11 / IEC 60811-401
b) Variation in Elongation at Break	%	± 15	
Volume Resistivity @ 25°C	Ohm-cm	1 X 10 <sup>16</sup>	ASTM-D-257
Dissipation factor @ 250V / 50 Hz, 25°C	-	0.0004	ASTM-D-150
Dielectric Constant @ 250V / 50Hz, 25°C	-	2.3 – 2.4	ASTM-D-150

### 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 mixed at a ratio 95:5 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. Alternatively, catalyst could be added using volumetric / gravimetric feeders in the main hopper during extrusion.

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

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## **PACKAGING :**

For Export:

550 kg. paper carton with aluminum foil liner & 40' FCL will take 22 MT.

25 kg. Moisture barrier multilayer liner bags pelletized & 40' FCL will take 23.4 MT.

For Local:

25 kg. 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.

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*The information given in the document is believed to be reliable and is given in the good faith but without warranty. The user should test the product to ascertain the suitability for the intended use. Product specification or the whole document is subject to change without any prior notice.*

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