



KLJ POLYMERS & CHEMICALS LIMITED

SIOPLAS XLPE COMPOUND

KLJ XL-01

Description:

KLJ-XL-01 is based on poly-ethylene chemically grafted with Silane. When it is mixed with catalyst master batch (KLJ-XL-MB-01M), it accelerates the cross linking reaction in presence of moisture.

This material is suitable to be used for cable up to 3KV.

Specifications:

KLJ-XL-01 Compound meets the following specifications.

IS 7098 Part-I
IEC - 60502

Physical Properties:

Sr. No	Parameter	Unit	Test Method	Spécification IS 7098 Part-I	Typical Value
01	Tensile Strength (min.)	Mpa	IS 10810 Part-7	12.5	20
02	Elongation at break (min.)	%	IS 10810 Part-7	200	600
03	Variation in properties after ageing		@ 135±3 °C for 7 days		
a	Tensile Strength	%	IS 10810 Part-11	±25	+8
b	Elongation at break	%	IS 10810 Part-11	±25	-7
04	Hot Set @ 200°C/15 minute 20N/cm ² (max.) (Thickness 1.0 mm)	%	IS 18010 Part-30	175	70
05	Permanent Set after cooling (max.)	%	IS 18010 Part-30	15	2.5
06	Volume Resistivity @ 27°C (min.)	Ohm-cm	IS 3396	1 x 10 ¹⁴	2.5 x 10 ¹⁶
07	Shrinkage @ 130±3°C/1 hour (max.)	%	IS 7098	4.0	1.2
08	Water absorption (gravimetric @ 85±2°C / 14 days (max.))	Mg/cm ²	IS 7098	1.0	0.30
09	Moisture Content (max.)	ppm	ASTM D-1045	-	600
10	Cold bend test @ -30°C	-	IS 10810 Part-20	No Crack	No Crack
10	Dielectric Constant (max)		IEC-60250	2.2	1.70
11	Dissipation Factor (max)		IEC-60250	0.004	0.0002
12	Dielectric Strength(min)	KV/mm	IEC-60243	22	30
13	Cold Impact test @ -30°C	-	IS 10810 Part-21	No Crack	No Crack
14	Cold Elongation test @ -30°C (min.)	%	IS 10810 Part-11	-	300

Processing Guidelines:

Grafted Polymer mixed with pre-heated Catalyst MB in the ratio 95:5 is to be extruded on PE or PVC extruder having L/D ratio of 22:1 to 26:1.

Typical process parameters are recommended as under:

Zone -1: 130 ± 15°C, Zone-2 : 150 ± 15°C, Zone- 3 : 170 ± 15°C,
Zone-4 : 190 ± 15°C, Zone-5 : 200 ± 15°C, X-Head & Die : 205 ± 15°C.

Tube on die extrusion preferable with DDR (Draw Down Ratio) of 2:1 to 3:1

It is recommended to dry the catalyst MB @ 60° 80°C for about 1 hour, before mixing with grafted polymer.

Note :- Special catalyst master batch will be available on demand as per below.

1. KLJ-XL-MB-MD For Metal deactivator
2. KLJ-XL-MB-UV For UV resistant
3. KLJ-XL-MB-07 For Thin insulation less than 0.8 mm thickness.

Cross Linking:

The above extruded product can be cross linked by immersion in hot water or upon exposure to low pressure steam at a temperature of 90 °C.

Typical Cross linking data are as under.

	Thickness mm	Curing Hours	Hot Set %	Permanent Set (Max.) %
Tape Sample	1.1	3.0	50 – 70	8
	2.2	3.0	80 – 120	10
Cable Sample	0.9 – 1.4	6.0	100 – 130	9
		9.0	80 – 100	9

Shelf Life/Storage:

KLJ-XL-01 can be stored for 6 months from date of manufacturing , without significant deterioration of the quality of material. However, it is recommended to be consumed as soon as possible.

KLJ-XL-01 is recommended to be stored in a cool, dry & clean environment in unopened original packaging.

Packaging:

KLJ-XL-01 granules are packed in 25 kg bags, which are protected from moisture ingress.

Safety:

KLJ-XL-01 & KLJ-XL-MB-01M are not classified as dangerous preparation.

The products are supplied in the form of free-flowing granules of approx. 2-3 mm size and can be readily handled with commercially available equipment. Handling and transport of the products may generate some dust and fines, which constitute a potential hazard for dust explosion. All metal parts in the system should therefore be properly grounded. Properly designed equipment and good housekeeping will reduce the risk. Inhalation of any type of dust should be avoided as it may cause irritation of the respiratory system.

The product is intended for industrial use only. MSDS is available on request.

Disclaimer:

- The specifications given are the guidelines only.
- Above compound is suitable to run on different machines; however some adjustments may be required on individual machine.
- All properties are tested as per ASTM/IS/IEC standards.
- Any data may change without prior information.
- The customers are advised to check the quality, prior to commercial use. There is no guarantee and/or warrantee what so ever, after processing.