



KLJ GROUP

XLPE COMPOUND



October 2022, Ed1

TECHNICAL INFORMATION

KLJ PX 36

PEROXIDE BASE XLPE COMPOUND FOR CV LINE FOR MV POWER CABLE

Description:

KLJ PX 36 is a low density, cross-linkable (peroxide based) polyethylene compound developed specially for continuous Vulcanization process to produce medium voltage power cables. It contains extremely low level of contamination, proper balance of anti-oxidant and peroxide to ensure thermal stability during and after extrusion and optimum cure levels.

Application:

KLJ PX 36 is designed for insulation of medium voltage cables up to 36 KV.

Specification:

KLJ PX 36 combination meets requirements as applicable under following standards, when Processed using sound extrusion practice and testing procedure

IEC – 60502/60840.

HD-620-S1

IS-7098 (Part-II)

Technical Characteristics:

Properties	Unit	Test Method	KLJ Specification	Typical Value
Melt flow rate (Base compound)	g/10min	ISO 1133	1.8- 2.2	2.0
Density	gm/cm ³	ISO 1872-2	0.92- 0.93	0.921
Tensile Strength at Break	MPa	IEC 60811-1-2	≥ 18	19
Elongation at Break	%	IEC 60811-1-2	≥ 450	480
Hot set at 200°C*				
Hot Elongation after 15 min	%	IEC 60811-2-1	≤ 60	55
Permanent Set after 5 min	%	IEC 60811-2-1	<5	3
Oven ageing at 135°C, 168 hours				
Retention in Tensile Strength at Break	%	IEC 60811-1-1	>90	92
Retention in Elongation at Break	%	IEC 60811-1-1	>90	95



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Oven ageing at 150°C, 168 hours

Properties	Unit	Test Method	Specification	Typical Value
Tensile Strength at Break	MPa	IEC 60811-1-1	± 30	-17
Elongation at Break	%	IEC 60811-1-1	± 30	-15
Shrinkage @ 130°C / 1 hours	%	IEC 60811-1-3	≤ 4	1.3
Vicat Softening Temperature (10 N)	°C	ISO 306	90±1	91
Methanol wash	ppm	KLJ TM	≤ 200	50
Moisture Content (KF method)	ppm	ISO 15512	≤ 200	100
Water absorption (gravimetric @ 85±2°C / 14 days (max.))	Mg/cm ²	IS 7098	<1	0.25
Brittleness Temperature	°C	ASTM D 746	<-76	<-76
Heat Deformation(120°C x 2kg), Contamination by Contamination Detector	%	IS 10810 P 15	<50	10
101 -200	No./500 g granules	KLJ TM	≤5	4
201 - 500			≤5	3
501 - 1000			≤0	0
Electrical Properties				
Volume Resistivity at 20°C	Ohm-cm	IEC 60093	≥ 10 ¹⁶	2.0 x 10 ¹⁶
Volume Resistivity at 90°C	Ohm-cm	IEC 60093	≥ 10 ¹²	1.0 x 10 ¹⁴
Dissipation Factor @ 250 V/50 Hz, 25 °C	-	IEC 60250	≤0.0003	0.0001
Dielectric Constant @ 250 V/50 Hz, 25 °C	-	IEC 60250	≤2.3	2.3
Dielectric strength at 3.18mm				
Method A(Short Time)	KV/mm	IEC 60243	≥ 30	32
Method B(Step By Step)	KV/mm	IEC 60243	≥ 23	27
Method C(Slow rate of rise)	KV/mm	IEC 60243	≥ 39	41
Insulation resistance constant at 90°C	MΩ.km	IS 10810 P 43	≥3.67	2000

*On 1 mm molded sheet at 180°C / 20 min.

Processing Guidelines:

Extrusion temperature profile	: Barrel:95 – 115°C , Head : 120°C, Die : 115°C,
Screw cooling Temperature	: 90°C
Screen mesh size	: 80/60/80 (Or as per Customer standard SOP)
Max. Melt Temperature	: 125°C
Max. CV Line Temperature	: 450°C and depending upon line speed.
N2 Pressure	: 9-10 Bar.



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The above should be taken only as guide points. Every processor is strongly advised to set the parameters depending on their machine design and configuration for optimum output. Also, to produce a good and reliable cable, it is essential to ensure careful and very clean handling of the insulation material.

Storage:

- It can be stored for 365 from date of manufacturing, however it is suggested to use within 90 days from the date of receipt. Shelf life is subject to storage in original intact packing, in cool and dry place, away from sunlight and weathering, storage temperature not generally exceeding 35°C.

Packaging:

KLJ PX 36

Form: Granules.

Package: 550/850 kg Octabin with aluminium liner with Top & Bottom discharge as required by the customer.

Safety:

This compound is 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.

Our technical service & for further information and assistance.

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Disclaimer: The data given above are for the guidelines purpose 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.