

PLEXCHEM TECHNOLOGIES



Grade 125-KN Polyethylene for the manufacture of Low voltage power cable insulation compound

Characteristics

Polyethylene used to manufacture a crosslinkable compound, curable by exposure to moisture to produce low voltage power cable insulation. This Polyethylene has been specially designed for cables operating up to 3.3 KV, allowing extrudability at high output rates. With the addition of a special modifier **PLEXLINK®** is less sensitive to, precrosslinking or scorching. It is also designed to give low shrinkage values even at high production speed. The resulting insulation is stabilized against copper degradation.

Description

PLEXLINK® Polyethylene is used to manufactured compounds using the **SILOXAN®** one-component system, a Silane crosslinking system developed by KABELMETAL ELECTRO GmbH. This process utilizes a special system that allows the additives and Silane to be homogeneously compounded with polyethylene pellets. The resulting compound is thermoplastic in nature that can be extruded, using normal extruding equipment and conditions, into the finished product. Curing of the finished product is done in the presence of moisture.

Properties

ITEM	Units	Typical Value	Test method
Compound			
Density	g/cm ³	0.92	ASTM D792
Melt Index	g/10min	1.6	ASTM D1238
Moisture	ppm	<200	OWN
Shelf Life	months	12	OWN
Finished Cable			
Tensile	N/mm ²	>15	IEC 811
Elongation at Break	%	>500	IEC 811
Shrinkage	%	<2	IEC 811
*Volume Resistivity	Ohm. cm	>10 ¹⁶	ASTM D257
*Dielectri Constant	--	2.31	ASTM D150
(*Under 25°C.50% RH)			
Heat Aging properties 7 days at 135oC			IEC 811
Variation of tensile strength	%	8	
Variation of elongation at Break	%	9	
Hot set test 20N/cm ² at 200°C			IEC 811
Elongation	%	<90	
Set	%	<5	

Material Handling

- (a) **PLEXLINK®** in sealed bags can be used even after one year's storage.
- (b) Torn bags are to be sealed immediately . Contents in a resealed bag have to be used within 1 week.
- (c) Store in a cool , dry place .

Processing conditions and precaution

1) Extrusion Equipment

- (a) L/D ratio 20/1-26/1. PVC or PE extruders are suitable with 3-3.5 compression ratio.
- (b) For tube extrusion, the recommended Draw Down ratio is <1.5:1. Recommended draw down is available on request at plexchem@singnet.com.sg
- (c) Screen mesh: at most 40/60; Stainless steel screen is recommended.
- (d) Cooling water temperature to be > 30°C.

2) Typical temperature Setting °C

<u>Feed</u>	<u>Compression</u>	<u>Metering</u>	<u>Neck</u>	<u>Die Head</u>	<u>Die</u>
150-160	160 – 180	180 – 200	190 – 210	210 – 230	240-280

3) Preheating

- (a) Under normal conditions, preheating is unnecessary.
- (b) Preheating (60°C/1 hrs) during cold weather may be required to increase line speed.

4) Start Up

- (a) Ensure extruder is thoroughly cleaned.
- (b) The temperature of the exiting material is measured at the mouth of the extruder (180 – 200°C).
- (c) Stop the screw and fix the die onto the extruder.
- (d) Connect the conductor to the capstan.
- (e) Turn on the screw speed and increase it significantly for a few seconds while allowing the material to bleed.
- (f) Slowly turn up the line speed until it reaches desired speed.

DO NOT LEAVE THE MELT IN THE EXTRUDER FOR MORE THAN 20 MINS!

5) Gas Flame

Use of a gas flame directed at the die will ensure a smoother surface and minimize the accumulation of die drool.

6) Curing

- (a) Curing time depends on temperature, thickness of insulation, cure time and presence of moisture.
- (b) Typical curing conditions for normal insulation (1.5 mm insulation thickness).

<u>ambient</u>	<u>steam</u>	<u>hot water</u>
80%RH, 28°C	low pressure	80°C
15 days	3 hours	3 hours

7) Masterbatches

It is recommended that color masterbatches be thoroughly dried before use i.e. at 60-70°C for 48 hours.

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Do you have the safety data sheet for this product? Please contact your service representative for one or E-mail us at: plexchem@plexchem.com.sg

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