

Data sheet

Granule Type: **APXLP13 /APCAT13N** Silane Cross-linkable Polyethylene Compound

Description

APXLP13 is a XLPE pre-grafted polyethylene which can be processed in combination with its catalyst master batch (**APCAT13N**) in conventional extruders. End product crosslinking occurs when the material is exposed to moisture.

Application

APXLP13 is suitable for insulation of low voltage wiring and power cables for the range up to 1kV. It's suitable for use in high speed XLPE Cable insulation lines.

Specification

The catalyst masterbatch **APCAT13N** in combination with the base material **APXLP13** meets the applicable requirements given below when processed using extrusion practice and testing procedure:

- BS 7870-5
- IEC 60502-1

Physical Properties

Properties	Standard and Test Method	Unit	Typical Value
Melt Flow Index (190°C/5kg)	ASTM D1238	gr/10min	3.5±0.5
Density	ASTM D 792 / IEC 60811-1-3	gr/cm ³	0.92±0.005
Properties before ageing Tensile strength Elongation at break	IEC 60811-1-1	N/mm ² %	min 20 min 500
Properties after ageing "7 days at 135°C" Variation of Tensile Variation of Elongation	IEC 60811-1-2	% %	max 25 max 25
Hot Set Test (200°C,0.2MPa) Elongation under load Permanent elongation after cooling	IEC 60811-2-1	% %	max 100 max 10
Volume Resistivity (23°C)	ASTM D257	Ω.cm	Min 10 ¹⁶
Water Absorption (85°C)	IEC60502-2	mg/cm ³	Max 1
Shrinkage (130°C , 1 hr)	IEC60502-2	%	Max 4

*Typical values reported above (except MFI) are obtained from samples cured in hot water (7 hours @ 95°C).

Processing Guidelines

1- The grafted polymer (**APXLP13**) and Catalyst master batch (**APCAT13N**) should be manually mixed at a ratio 95:5 at room temperature, just before consumption. Mixing in large quantities should be avoided, since such leftover premix cannot be stored.

2- The actual extrusion conditions will depend on the type of equipment used. The following conditions may be used as a guide when starting up the extruder.

	Zone 1	Zone 2	Zone 3	Zone 4	Head	Die	Screw*
max (°C)	150	160	170	180	190	220	70
min (°C)	140	150	160	170	180	200	80

*The thermostatic control of the screw improves processing results.

Extruder L/D= 20-26

3- Head and tools should be designated allowing streamlined flow avoiding stagnation of the material.

4- A breaker plate and filter net (80 -140 mesh/cm²) are recommended to be used.

5- It is important that extruder should not be kept idle for more than 15minutes when filled with grafted polyethylene (APXLP13) and catalyst (APCAT13N) premix.

6- In case of line stop longer than 10 - 15 minutes: Before restarting purge with standard HDPE (MFI: 0.3g/10 min.)

Cross linking

Depending on the end product thickness duration of cross linking can be vary, under following conditions:

- By immersion in 90°C hot water, 2-6 hrs.
- By exposure to low pressure water steam, 6-15 hrs.

Storage

- Packaging should be keep closed during storage
- Ambient temperature should not exceed more than 35°C
- Avoid direct exposure to sunlight and humid weathering
- Compound should be used maximum 3-4 hours after opening packaging

Packaging

It is available in the form of pellets and supplied in aluminum multi-layer bags with a net content of 25 kg.

Safety

APXLP13 is classified as no-dangerous material.