Polyethylene

Visico™ LE4423/LE4460/ LE4432

Silane Crosslinkable Insulation Compound

Description

Visico LE4423/LE4460/ LE4432 is a scorch retardant, moisture-crosslinking polyethylene compound for low voltage insulation

LE4423/LE4460/LE4432 is a black, halogen-based flame retardant, moisture-induced crosslinking polyethylene compound that is designed for use as low voltage wire insulation and jacketing. The combination of VISICO **LE4423** base resin, along with the LE4460 brominated flame retardant masterbatch and the **LE4432** tin catalyst masterbatch provides a highly scorch retardant compound with excellent thermal stability and good flame properties. **LE4423/LE4460/LE4432** contains a patented scorch retardant additive (SRA) that increases the processing window for a moisture crosslinking compound and minimizes the tendency for premature crosslinking in the extruder, head or die.

LE4432 also provides, in addition to catalyst, a stabilization package containing suitable antioxidants, a metal deactivator and a 25% loading of fine particle size carbon black for UV weather resistance. Properly mixed, during the extrusion process, **LE4423/LE4460/LE4432** exhibits excellent thermal stability to oxidation. The final insulation or jacketing will also contain 2.5% of suitable carbon black to ensure satisfactory UV weathering stability.

Application:

LE4423/LE4460/LE4432 is recommended for use as insulation for low voltage control cables and power cables up to 6 kv in rating.

Specifications

Visico LE4423/LE4460/ LE4432 in combination meets the applicable requirements as below when processed using extrusion practice and testing procedure:

ASTM D 2655
NBN C 33-321
EC 502
HD 603 S1
NF C32-090
HD 604 S1
NEMA WC 70
NEMA WC 71

Physical Properties

Property	Typical Value Data should not be used for specification work	Test Method
Density (Base Resin)	923 kg/m3	ASTM D 792
Density (Masterbatch)	2000 kg/m3	ASTM D 792
Density (Catalyst)	1050 kg/m3	ASTM D 792
Melt Flow Rate (190 °C/2,16 kg) [1]	0,9 g/10min	ASTM D 1238
Tensile Strain at Break	300 %	ASTM D 412
Tensile Stress at Break	2.350 psi	ASTM D 412
Tensile Stress at Break	16,5 MPa	
Retention of Tensile Properties After Ageing (168 h, 121	>= 90 %	

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°C)			
Hot Creep Test (150 °C, 0,20 MPa)	Elongation under load	< 50 %	ICEA T-28-562
	Permanent deformation	< 5 %	

[1] Base Resin

Electrical Properties

Property	Typical Value Data should not be used for specification work	Test Method
Dielectric constant (60 Hz)	2,5	ASTM D 150
Volume Resistivity	10 POhm.cm	ASTM D 257
Dielectric Strength	> 22 kV/mm	
Dissipation Factor (60 Hz)	0,0005	ASTM D 150

Combustion Properties

Property	Typical Value Data should not be used for specification work	Test Method
Horizontal Flame Test (14 AWG-30 mil)	Pass	

Processing Techniques

Following parameters should be used as guidelines:

LE4432 and **LE4460** are typically mixed with the **LE4423** base resin directly at the extruder hopper using a volumetric or gravimetric masterbatch feeder. Most equipment designed for PVC or PE extrusion is equally suitable for **LE4423/LE4460/LE4432**. Typically the following process conditions should be used as a starting point to achieve a stable extrusion process. On-size pressure or low draw down tube-on tooling is recommended for a cable having a smooth glossy appearance. Whichever type of tooling is used, however, the die should have parallel lands of length Whichever type of tooling is used, however, the die should have parallel lands of a length approximaely twice that of the final cable diameter.

Typically the following process conditions are used:

Barrel 1	295 °F 146 °C
Barrel 2	325 °F 163 °C
Barrel 3	340 °F 171 °C
Barrel 4	340 °F 171 °C
Die head	350 °F

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177 °C

Packaging

- Base material

Package: Octabins

- Catalyst master batch

Package: Smallbins

- FR master batch

Package: Smallbins

Storage

Visico LE4423/LE4460/ LE4432 has a shelf life of 12 months from delivery date if stored in unopened original packages, under dry and clean conditions at temperatures between 10 - 30 °C (50 - 85 °F).

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