

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

### **Physical Properties**

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

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# Polyethylene Visico LE4423/LE4460/ LE4432

°C) Hot Creep Test (150 °C, 0,20 MPa)

Elongation under load Permanent deformation

< 50 % < 5 % ICEA T-28-562

<sup>1</sup> Base Resin

### **Electrical Properties**

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

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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