



Compound for silane crosslinkable cables

Description

Visico LE4423 / Visico LE4438 is a silane crosslinkable natural compound designed for low voltage power cables up to 6 kV.

Visico LE4423 and Visico LE4438 is a combination of a Visico base material and a catalyst master batch which accelerates the moisture-induced crosslinking reaction.

When properly mixed, addition of 5 parts of Visico LE4438 to 95 parts of Visico LE4423, insulation with excellent thermo-oxidative stability, also in contact with copper as well as aluminium, is achieved.

Applications

Visico LE4423 / Visico LE4438 is designed for:

Insulation of low voltage cables for the range up to 6 kV.

Additives

Visico LE4423 / Visico LE4438 contains antioxidant and metal deactivator. Visico LE4423 contains a permanent scorch retardant additive, ensuring safe processing and enabling the use of a highly active crosslinking catalyst.

Specifications

Visico LE4423 / Visico LE4438 in combination meets the applicable requirements as below when processed using sound extrusion and testing procedure:

ASTM D 1248 Type I, Class A, Category 4 HD 604 S1
IEC 60502-1 NEMA WC 70
HD 603 S1 NEMA WC 71

The standards referred to above is a selection and is not complete coverage of all applicable standards. Contact your Borealis representative for additional information.

Special features

Visico LE4423 / Visico LE4438 consists of specially selected components to offer:

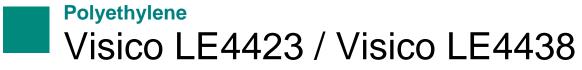
Excellent storage stability No volatiles

Visico LE4423 and Visico LE4438 is a combination of a Visico base material and a catalyst masterbatch, which accelerates the moisture-induced crosslinking reaction. Visico LE4423 is based upon a cost optimised low density polyethylene, copolymerised with vinyl silane.

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Physical Properties

Property		Typical Value Test Method Data should not be used for specification work		
Density (mixture 95:5)		923 kg/m3	ISO 1872-2/ISO 1183-2	
Melt Flow Rate (190 °C/2,16 kg)		1,0 g/10min	ISO 1133	
Tensile Strain at Break (250 mm/min)		> 300 %	ISO 527	
Tensile Strength (250 mm/min)		> 15 MPa	ISO 527	
Change of Tensile Properties After Ageing (240 h, 135 °C)		<= 25 %	IEC 60811-1-2	
Brittleness temperature		< -76 °C	ASTM D 746	
Environmental Stress Crack Resistance (50 °C) (Igepal 10 %), (F20)		> 96 h	IEC 60811-4-1/B	
Hardness, Shore D (1s)		52	ISO 868	
Hot Set Test (200 °C, 0,20	Elongation under load	60 %	IEC 60811-2-1	
MPa)	Permanent deformation	0 %		

¹ These values are based on sufficient crosslinked/cured Visico. If Visico is sufficient crosslinked the material will continue to crosslink during the ageing procedure and a larger change between values before and after ageing may occur.

Electrical Properties

Property	Typical Value Data should not be used for	Test Method specification work	
Dielectric constant (50 Hz) DC Volume Resistivity Dielectric Strength	< 2,3 > 10 POhm.cm > 22 kV/mm	IEC 60250 IEC 60093 IEC 60243	
Dissipation Factor (50 Hz)	< 0,0005	IEC 60250	

Processing Techniques

Most equipment designed for PVC/PE extrusion is suitable.

PVC screw or PE screw with an L/D above 20 is recommended. Use of filter (60-100 mesh) is recommended.

Extrusion

Typically the following process conditions are used:

Barrel 1	150 °C
Barrel 4	170 °C
Barrel 3	170 °C
Barrel 2	170 °C
Die head	170 °C

Having the above set temperature profile a stable extrusion process and a cable having smooth glossy appearance should be achieved. On-size pressure or draw down tube-on tooling is preferred.

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Visico LE4423 / Visico LE4438

Crosslinking

These products can be crosslinked in room temperature, by immersion in hot water or exposed to low pressure steam at a temperature up to 90°C. This time period may be varied due to the humidity, thickness of insulation, reel size and temperature.

For example, 1.0 mm thick insulation of Visico LE4423 and Visico LE4438 will cross link in a water bath of 90°C for a period of 1 to 4 hours giving a Hot Set Elongation of 60% (depending on conductor and reel size) Visico LE4423 and Visico LE4438 can also be cross linked in ambient conditions from 6 days and longer depending on relative humidity.

Thickness Time

1 mm 1 - 4 hrs 90°C. Sauna or water bath.

Packaging

Visico LE4423 - Base material Package: Bulk

Octabins **Smallbins**

Visico LE4438 - Catalyst master batch

Package: Bags

Visico LE4423 / Visico LE4438 is advised to be stored as follows: Visico LE4423 and Visico LE4438 can be stored for 18 months after production, at 10-30 °C in unopened original packages, without significant detoriation in the quality of the material.

More information on storage is found in our "Safety data sheet" / "Product safety information sheet" for this product.

Safety

These products are not classified as dangerous and are intended for industrial use only. Check and follow local codes and regulations!

Please see our "Safety data sheet" / "Product safety information sheet" for details on various aspects of safety, recovery and disposal of the products. For more information, contact your Borealis representative.

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