PRODUCT DATA SHEET

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Polyethylene

Visico™ LE4423 / Visico™ LE4438

Silane Crosslinkable Insulation Compound

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

Typical characteristics

Visico™ LE4423 / Visico™ LE4438 can be described with following typical characteristics:

Excellent processing stability	Good curing speed
Low scorch allowing long runs and more frequent tooling changes	No drying prior to extrusion
Less smell	Excellent surface finish
More consistent quality (no volatiles)	Excellent storage stability

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.

Applications

Visico™ LE4423 / Visico™ LE4438 is intended for following applications:

Insulation of low voltage energy cables, range up to 6 kV

Specifications

Visico™ LE4423 / Visico™ LE4438 is expected to meet the applicable requirements included in the below mentioned standards provided it is processed using sound material handling and processing practices as well as appropriate testing procedures.

ASTM D1248 Type I, Class A, Category 4	IEC 60502-1
HD 603 S1	ANSI/NEMA WC 70/ICEA S-95-658-2021
HD 604 S1	NEMA WC 71 / ICEA S-96-659

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

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Physical properties

Property	Typical value *	Unit	Test method
Density [1]	923	kg/m³	ISO 1183-1
Melt flow rate (190 °C/2.16 kg) [2]	1.0	g/10min	ISO 1133-1
Tensile strength (250 mm) [3]	>15	MPa	IEC 60811-501
Tensile strain at break (250 mm/min) [3]	>300	%	IEC 60811-501
Change of tensile properties After ageing 135 °C, 168h [4]	≤25	%	IEC 60811-401
Hot set test - Permanent deformation (200 °C, 0.20 MPa) [3]	0	%	IEC 60811-507
Hot set test - Elongation under load (200 °C, 0.20 MPa) [3]	60	%	IEC 60811-507

* Data should not be used for specification work

[1] *(mixture 95:5)*
[2] *Base resin*
[3] *Addition of 5% Catalyst masterbatch.*
[4] *Addition of 5% Catalyst masterbatch.*
These values are based on sufficient crosslinked/cured Visico. If Visico is not sufficiently 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 *	Unit	Test method
Dielectic constant (50 Hz) [3]	2.3	-	IEC 60250

* Data should not be used for specification work

[3] *Addition of 5% Catalyst masterbatch.*

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:

Processing setting	Typical value/range
Barrel temperature 1	150 °C
Barrel temperature 2	170 °C
Barrel temperature 3	170 °C
Barrel temperature 4	170 °C
Die head temperature	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.

Crosslinking:
These products can be crosslinked 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.

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Packaging and storage

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.

Product compliance documents

Latest versions of product safety information sheets (PSIS), product safety data sheets (SDS) and other product liability documents are available in our website www.borealisgroup.com.

Disclaimer

The product(s) mentioned herein are not intended to be used for medical, pharmaceutical or healthcare applications and we do not support their use for such applications.
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