

Visico™ LE4421/LE4460/LE4432

Crosslinked Polyethylene

Borealis AG

Message:

Visico LE4421/LE4460/LE4432 is a scorch retardant, moisture-crosslinking polyethylene compound for low voltage insulation. LE4421/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 LE4421 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. LE4421/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. A finished compound that is composed of 70 parts LE4421 mixed with 20 parts of LE4460 and 10 parts of LE4432 is recognized by Underwriters Laboratories as VISICO HORIZONTAL. VISICO HORIZONTAL is designed to reduce normal PE flame spread characteristics and achieve an HB-1 flame rating on 14 AWG wires and larger. 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, LE4421/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. LE4421/LE4460/LE4432 is recommended for use as insulation for low voltage control cables and power cables up to 6 kv in rating.

Specifications

ASTM D 2655

HD 603 S1

EC 502

NBN C 33-321

NF C32-090

Underwriters Laboratories Standards 854 for types USE and USE-2

Canadaian Standards Association C22.2 No. 38 Cable Types RW-90 and RWU-90

General Information	
Additive	Metal deactivator
	Scratch Resistance
	Antioxidation
	Carbon black (3%)
Features	Antioxidation
	Antioxidation
	Good UV resistance
	Crosslinkable
	Halogenated
	Good weather resistance
	Thermal stability, good
	brominated
Uses	Flame retardancy
	Low voltage insulation
Wire Types	Cable sheath
	RW-90
	RWU-90

USE-2

Uses

Agency Ratings	ASTM D 2655
	CSA C-22.2 No. 38 Type RW-90
	EC 1907/2006 (REACH)
	EC 502
	HD 603 S1
	NFC 32-090
	UL 854

Appearance	Black
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Forms	Particle
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Physical	Nominal Value	Unit	Test Method
Specific Gravity			ASTM D792
-- ¹	0.923	g/cm ³	ASTM D792
-- ²	1.05	g/cm ³	ASTM D792
-- ³	2.00	g/cm ³	ASTM D792

Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	0.90	g/10 min	ASTM D1238
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Elastomers	Nominal Value	Unit	Test Method
Tensile Strength (Yield)	16.5	MPa	ASTM D412
Tensile Elongation (Break)	300	%	ASTM D412

Aging	Nominal Value	Unit	
Retention of Tensile Properties - After Ageing 168 h (121°C)	> 90	%	
Hot Creep			ICEA T-28-562
150°C ⁴		%	ICEA T-28-562
150°C ⁵		%	ICEA T-28-562
Flame test ⁶	Pass		UL 1581

Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	1.0E+16	ohms · cm	ASTM D257
Dielectric Strength	> 22	kV/mm	ASTM D149
Dielectric Constant (23°C, 60 Hz)	2.50		ASTM D150
Dissipation Factor (23°C, 60 Hz)	5.0E-4		

Additional Information

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.

Extrusion	Nominal Value	Unit
Cylinder Zone 1 Temp.	146	°C
Cylinder Zone 2 Temp.	163	°C
Cylinder Zone 3 Temp.	171	°C
Cylinder Zone 4 Temp.	171	°C

Die Temperature	177	°C
NOTE		
1.	Base resin	
2.	Catalyst	
3.	Masterbatch	
4.	Permanent deformation, >0.20 MPa	
5.	Elongation under load, >0.20 MPa	
6.	14AWB-30 mil	

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