

Technical Data

Product Description

Visico™
LE4427/Ambicat™ LE4476

Visico LE4427 / Ambicat LE4476 is a silane crosslinkable natural compound designed for weather resistant covering/insulation of overhead and façade cables.

The black base material Visico LE4427 in combination with the catalyst masterbatch Ambicat LE4476 will accelerate the moisture-induced crosslinking reaction. The system is highly active and crosslinks quickly at ambient conditions, in sauna or in hot water.

When properly mixed, addition of 5 parts of Ambicat LE4476 to 95 parts of Visico LE4427 , insulation with excellent thermo-oxidative stability, also in contact with copper as well as aluminium, is achieved.

Visico LE4427 / Ambicat LE4476 contains antioxidant, metal deactivator and a drying agent. Visico LE4427 contains a permanent scorch retardant additive, ensuring safe processing and enabling the use of highly active crosslinking catalyst.

Visico LE4427 / Ambicat LE4476 in combination meets the applicable requirements as below when processed using sound extrusion and testing procedure:

- ANSI/ICEA S-70-547
- ASTM D 1248 Type II, Class C, Category 4
- HD 603 S1
- HD 626 S1 (TIX-2, TIX-3, TIX-5, TIX-7, TIX8)
- NF C33-209 part 6-2 (Except messenger wire)
- NEMA WC 70
- 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.

The black base material Visico LE4427 in combination with the catalyst masterbatch Ambicat LE4476 is a readymade two-component system which crosslinks quickly at ambient conditions, in sauna or in hot water. The base material Visico LE4427 is a black filled low density polyethylene, copolymerised with vinyl silane and designed for overhead cable covering/insulation. Visico LE4427 contains a well dispersed carbon black to provide the necessary protection for outdoor weatherability according to the French specification NF C 33 209 part 6-2, Cable de Façade. The catalyst masterbatch, Ambicat LE4476 , contains a novel, patented, environmentally friendly crosslinking catalyst and is completely free from heavy metals.

Generic
XLPE

This data represents typical values that have been calculated from all products classified as: Generic XLPE

This information is provided for comparative purposes only.

General	Visico™ LE4427/Ambicat™ LE4476	Generic XLPE
Manufacturer / Supplier	• Borealis AG	• Generic
Generic Symbol	• XLPE	• XLPE
Material Status	• Commercial: Active	• Commercial: Active
Literature ¹	• Technical Datasheet (English)	--
Search for UL Yellow Card	• Borealis AG	--
Availability	• Africa & Middle East • Asia Pacific • Europe	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America

General	Visico™ LE4427/Ambicat™ LE4476	Generic XLPE
Additive	<ul style="list-style-type: none">• Antioxidant• Carbon Black: 3%• Metal Deactivator• Scorch Resistant	--
Features	<ul style="list-style-type: none">• Antioxidant• Copolymer• Crosslinkable• Fast Cure• Good Processability• Good Surface Finish• Good Thermal Stability• Good Weather Resistance• Low Density• Low Die Swell	--
Uses	<ul style="list-style-type: none">• Cable Jacketing• Insulation• Masterbatch• Outdoor Applications	--
Agency Ratings	<ul style="list-style-type: none">• ANSI/ICEA S-70-547• ASTM D1248, II, Class C, Cat. 4• HD 603 S1• HD 626 S1, TIX-3 , TIX-2, TIX-5, TIX8• NEMA WC-70 , WC-71• NFC 33-209, Part 6-2 (Except messenger wire)	--
Appearance	<ul style="list-style-type: none">• Black	--
Forms	<ul style="list-style-type: none">• Granules	--
Processing Method	<ul style="list-style-type: none">• Extrusion	--

Physical	Visico™ LE4427/Ambicat™ LE4476	Generic XLPE	Unit	Test Method
Density / Specific Gravity				
--	--	0.900 to 1.32	g/cm³	ASTM D792
-- ³	0.935	--	g/cm³	ISO 1183
--	--	0.920 to 0.934	g/cm³	ISO 1183
--	--	0.918 to 0.944	g/cm³	ASTM D1505
Apparent (Bulk) Density	--	0.45 to 1.26	g/cm³	ASTM D1895
Melt Mass-Flow Rate (MFR)				
190°C/2.16 kg	--	0.32 to 1.2	g/10 min	ASTM D1238
190°C/2.16 kg	1.0	0.94 to 1.0	g/10 min	ISO 1133
Environmental Stress-Cracking Resistance (ESCR)				
--	--	96.0 to 1090	hr	ASTM D1693
Condition B, 50°C, 10% Igepal, F20	> 96.0	--	hr	IEC 60811-4-1/B
Carbon Black Content	2.5	--	%	ISO 6964



Mechanical	Visico™ LE4427/Ambicat™ LE4476	Generic XLPE	Unit	Test Method
Tensile Strength				
Yield	--	12.0 to 31.0	MPa	ASTM D638
Yield	--	14.8 to 22.0	MPa	ISO 527-2
Yield	> 15.0	--	MPa	ISO 527-2/250
Break	--	12.2 to 16.5	MPa	ASTM D638
--	--	12.5 to 20.0	MPa	ASTM D638
--	--	13.0 to 20.1	MPa	ISO 527-2
Tensile Elongation				
Break	--	300 to 600	%	ASTM D638
Break	--	240 to 400	%	ISO 527-2
Break	> 300	--	%	ISO 527-2/250
Hardness	Visico™ LE4427/Ambicat™ LE4476	Generic XLPE	Unit	Test Method
Durometer Hardness				
--	--	47 to 64		ASTM D2240
--	--	52 to 55		ISO 868
Thermal	Visico™ LE4427/Ambicat™ LE4476	Generic XLPE	Unit	Test Method
Brittleness Temperature	< -76.0	-76.0 to -25.0	°C	ASTM D746
UL Temperature Rating	--	90 to 91	°C	
Hot Set				IEC 60811-2-1
200°C ⁴	30	--	%	
200°C ⁵	0.0	--	%	
Aging	Visico™ LE4427/Ambicat™ LE4476	Generic XLPE	Unit	Test Method
Change in Tensile Strength in Air	--	7.8 to 10	%	ISO 188
Change in Tensile Strain at Break in Air	--	-20 to -5.1	%	ISO 188
Change in Tensile Strength	--	9.3 to 16	%	ASTM D471
Change in Ultimate Elongation	--	9.4 to 15	%	ASTM D471
Change in Tensile Properties - 240 h (150°C)	< 25	--	%	IEC 60811-1-2
Retention of Tensile Properties				
-- ⁶	> 70	--	%	
-- ⁷	> 85	--	%	
Electrical	Visico™ LE4427/Ambicat™ LE4476	Generic XLPE	Unit	Test Method
Volume Resistivity				
--	--	3.0 to 1.0E+16	ohms·cm	ASTM D257
--	1.0E+15	1.0E+2 to 1.1E+16	ohms·cm	IEC 60093
Dielectric Strength				
--	--	20 to 47	kV/mm	ASTM D149
--	--	20 to 25	kV/mm	IEC 60243-1
Dielectric Constant				
--	--	2.30 to 2.58		ASTM D150
--	--	2.29 to 2.31		IEC 60250
50 Hz	< 2.90	--		IEC 60250



Electrical	Visico™ LE4427/Ambicat™ LE4476	Generic XLPE	Unit	Test Method
Dissipation Factor				
--	--	3.0E-4 to 1.0E-3		ASTM D150
--	--	3.0E-4 to 6.1E-4		IEC 60250
50 Hz	< 1.0E-3	--		IEC 60250

Flammability	Visico™ LE4427/Ambicat™ LE4476	Generic XLPE	Unit	Test Method
Oxygen Index	--	24 to 27	%	ASTM D2863

Additional Information	Visico™ LE4427/Ambicat™ LE4476	Generic XLPE	Unit
Crosslinking			
700.0 µm ⁸	2.0	--	day
700.0 µm ⁹	< 25.0	--	min
1.80 mm ⁸	7.0	--	day
1.80 mm ⁹	1.00	--	hr

Injection	Visico™ LE4427/Ambicat™ LE4476	Generic XLPE	Unit
Drying Temperature	--	60 to 71	°C
Rear Temperature	--	210	°C
Middle Temperature	--	188 to 189	°C
Front Temperature	--	191	°C
Nozzle Temperature	--	196 to 197	°C
Mold Temperature	--	46	°C

Injection Notes	This data represents typical values that have been calculated from all products classified as: Generic XLPE		
Generic XLPE	This information is provided for comparative purposes only.		

Extrusion	Visico™ LE4427/Ambicat™ LE4476	Generic XLPE	Unit
Drying Temperature	--	50 to 85	°C
Drying Time	--	3.5 to 5.0	hr
Cylinder Zone 1 Temp.	150	129 to 166	°C
Cylinder Zone 2 Temp.	170	159 to 176	°C
Cylinder Zone 3 Temp.	170	162 to 190	°C
Cylinder Zone 4 Temp.	170	162 to 206	°C
Cylinder Zone 5 Temp.	--	183 to 212	°C
Melt Temperature	--	103 to 193	°C
Die Temperature	170	168 to 227	°C

Extrusion Notes	This data represents typical values that have been calculated from all products classified as: Generic XLPE		
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Notes

- ¹ These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.
- ² Typical properties: these are not to be construed as specifications.
- ³ Mixture 93:7, ISO 1872-2
- ⁴ Elongation under load, 0.20 MPa
- ⁵ Permanent deformation, 0.20 MPa
- ⁶ After UV Ageing, 6 weeks
- ⁷ After UV Ageing, 3 to 6 weeks
- ⁸ In air 23°C, 50 % humidity
- ⁹ 90°C, Sauna or water bath

