



Polyethylene

Casico™ FR4807

Natural Low Smoke Zero Halogen Flame Retardant Jacketing Compound for Flexible Cords and Data Cables

Description

Casico FR4807 is a thermoplastic, low smoke zero halogen (LSZH) flame retardant, UV stabilised, natural jacketing compound combining with excellent extrusion properties.

It is based on the novel technology, Casico, containing inorganic filler and a novel char-forming additive which confer flame retardancy with very limited smoke generation.

Applications

Casico FR4807 is designed for:

Jacket for patch data cables and 80 °C rated jacket for flexible cords

It can be used in areas sensitive to smoke or corrosive and toxic combustion products. For most cable constructions, Casico FR4807 has sufficient flame retardancy to satisfy single wire vertical burning tests.

Specifications

Casico FR4807 meets the applicable requirements below using sound commercial extrusion practice and testing procedures:

ASTM D 1248 Type I, Class A, Category 4

ISO 1872-PE KGHN-23D006

The following cable material standards are met by Casico FR4807:

EN 50290-2-27
EN 50363-8 TM7

VDE 0207 Teil 24 (HM2)
BS 7655 LTS3

Cables manufactured with Casico FR4807 using sound extrusion practice normally comply with the following cable product standards:

EN 50288

BS 7211

Special features

Casico FR4807 consists of specially selected components to offer:

Low smoke and reduced toxic or corrosive gas emissions
Excellent processing properties
Superb system ageing compatibility
Low water permeability

UV stabilised and suitable for colouring
Possibility for cable downsizing
Processability on most PVC/PE extrusion equipment
No need for pre-drying normally

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Physical Properties

Property	Typical Value	Test Method
Data should not be used for specification work		
Density (Compound) ¹	1150 kg/m ³	ISO 1872-2/ISO 1183
Melt Flow Rate (190 °C/2,16 kg) ¹	1,0 g/10min	ISO 1133
Flexural Modulus ¹	100 MPa	ISO 178
Tensile Strain at Break ²	700 %	IEC 60811-1-1
Tensile Strength (50 mm/min) ²	11,5 MPa	IEC 60811-1-1
Retention of Tensile Properties After Ageing (240 h, 100 °C) ²	< 20 %	IEC 60811-1-2
Retention of Tensile Properties After UV Ageing ²	< 20 %	
Hardness, Shore D (15 s) ¹	31	ISO 868
Pressure Test at High Temperature (80 °C, 4 h) ²	17 %	IEC 60811-3-1
Cold Bend (-40 °C) ²	Pass	IEC 60811-1-4
Cold Impact (-40 °C) ²	Pass	IEC 60811-1-4
Water absorption (70 °C, 14 Days) ²	0,4 mg/cm ²	IEC 60811-1-3

¹ Compound² Cable (0.7 mm insulation over 1.5 mm² solid Cu)

Electrical Properties

Property	Typical Value	Test Method
Data should not be used for specification work		
Volume Resistivity ¹	6 POhm.cm	IEC 60093
Dielectric Strength ¹	> 20 kV/mm	IEC 60243
Breakdown Voltage ²	32 kV	ISO 6722
Breakdown Duration ²	Pass	IEC 60227-2/2.3

¹ Compound² Cable (0.7 mm insulation over 1.5 mm² solid Cu)

Combustion Properties

Property	Typical Value	Test Method
Data should not be used for specification work		
Limited Oxygen Index ¹	34 %	
NBS Smoke Data (76x76x0.7 mm plaque)	Optical Smoke Density Dmax Time to Dmax	46 6 min
Flaming mode		
NBS Smoke Data (76x76x0.7 mm plaque) Non	Optical Smoke Density Dmax Time to Dmax	54 20 min
Flaming mode		
Cone Calorimeter (heat flux 35 kW/m ² , 3 mm plaque)	Ignition time Average Heat Release Max Heat Release Heat Combustion Smoke Obscuration	134 s 193 kW/m ² 335 kW/m ² 28 MJ/dm ³ 531 m ² /dm ³
		ASTM E 662-83
		ASTM E 662-83
		ISO 5660

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	CO	0,026 kg/dm ³	
	CO ₂	1,8 kg/dm ³	
Corrosivity of Combustion Fumes ¹		1,8 µS/cm	IEC 60754-2
		5,3	

¹ Compound

Processing Techniques

Most equipment designed for PVC/PE extrusion is suitable.

Using the below set temperatures a stable extrusion process and a cable having a smooth glossy appearance can be achieved. On-size pressure or low draw down tube-on tolling is preferred. Whichever type of tooling is used, the die should preferably have a parallel land of length equal to the final cable diameter. Copolymer based masterbatches are suitable for colouring Casico FR4807.

Barrel 1	110 °C
Barrel 2	140 °C
Barrel 3	160 °C
Barrel 4	170 °C
Die	170 °C

Packaging

Package: Octabins

Storage

Casico FR4807 normally does not need pre-drying unless the material has been stored in a moist environment for a long period. In such cases drying in dehumidified air for 4 hours at 70°C will normally reduce the moisture content to an acceptable value.

Safety

The product is not classified as dangerous. Check and follow local codes and regulations!

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



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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.

To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication, however we do not assume any liability whatsoever for the accuracy and completeness of such information.

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