

PRODUCT DATA SHEET

28.01.2016 Ed.1

**Polyethylene****Casico™ FR4803**

Natural Low Smoke Zero Halogen Flame Retardant Jacketing Compound for Building and 1 kV Cables

Description

Casico FR4803 is a thermoplastic, low smoke zero halogen (LSZH) flame retardant, UV stabilised, natural jacketing compound combining with excellent extrusion properties. The composition is based on the elements Carbon, Hydrogen, Oxygen, Silicon and Calcium. Compounds based on these elements will therefore be the only significant constituents of the combustion fumes. Other elements may be present in concentrations less than 0.1%.

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 FR4803 is designed for:

Jacket for 90 °C rated building wires (installation cables)
and 1 kV low voltage cables

It can be used in areas sensitive to smoke or corrosive and toxic combustion products. For most cable constructions, Casico FR4803 has sufficient flame retardancy to satisfy single wire vertical burning tests.

Specifications

Casico FR4803 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 FR4803:

EN 50290-2-27
EN 50363-8 TM7

VDE 0207 Teil 24 (HM2, HM4 & HM5)
BS 7655 LTS1-4

Cables manufactured with Casico FR4803 using sound extrusion practice normally comply with the following cable product standards:

EN 50288
VDE 0250 Teil 215

BS 7211
IEC 60502 Part 1 ST3

Special Features

Casico FR4803 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	0,4 g/10min	ISO 1133
Flexural Modulus ¹	205 MPa	ISO 178
Tensile Strain at Break ²	500 %	IEC 60811-501
Tensile Strength (50 mm/min) ²	12 MPa	IEC 60811-501
Change of Tensile Properties After Ageing (240 h, 100 °C) ²	< 20 %	IEC 60811-401
Change of Tensile Properties After UV Ageing ²	< 20 %	
Hardness, Shore D (15 s) ¹	39	ISO 868
Pressure Test at High Temperature (90 °C, 4 h) ²	19 %	IEC 60811-508
Cold Bend (-40 °C) ²	Pass	IEC 60811-504
Cold Impact (-40 °C) ²	Pass	IEC 60811-506
Water absorption (70 °C, 14 Days) ²	0,11 mg/cm ²	IEC 60811-402

¹ Compound

² 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		
DC Volume Resistivity ¹	45 PΩcm	IEC 60093
Dielectric Strength ¹	> 20 kV/mm	IEC 60243

¹ Compound

Combustion Properties

Property	Typical Value	Test Method
Data should not be used for specification work		
Limiting Oxygen Index ¹	31 %	ISO 4589A
Corrosivity of Combustion Fumes ¹	1,5 µS/cm pH 5,3	IEC 60754-2

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

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die should preferably have a parallel land of length equal to the final cable diameter. Homo or Copolymer based masterbatches are suitable for colouring Casico FR4803.

Barrel 1	130 °C
Barrel 2	150 °C
Barrel 3	170 °C
Barrel 4	180 °C
Die	180 °C

Packaging

Package: Bulk
Octabins

Storage

Casico FR4803 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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Casico FR4803**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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It is the customer's responsibility to inspect and test our products in order to satisfy itself as to the suitability of the products for the customer's particular purpose. The customer is responsible for the appropriate, safe and legal use, processing and handling of our products.

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