

 **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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## Casico FR4807

### Physical Properties

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

<sup>1</sup> Compound

<sup>2</sup> Cable (0.7 mm insulation over 1.5 mm<sup>2</sup> solid Cu)

### Electrical Properties

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

<sup>1</sup> Compound

<sup>2</sup> Cable (0.7 mm insulation over 1.5 mm<sup>2</sup> solid Cu)

### Combustion Properties

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

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|                                              |                       |                                                                        |             |
|----------------------------------------------|-----------------------|------------------------------------------------------------------------|-------------|
| Corrosivity of Combustion Fumes <sup>1</sup> | CO<br>CO <sub>2</sub> | 0,026 kg/dm <sup>3</sup><br>1,8 kg/dm <sup>3</sup><br>1,8 µS/cm<br>5,3 | IEC 60754-2 |
|----------------------------------------------|-----------------------|------------------------------------------------------------------------|-------------|

<sup>1</sup> 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 preferable 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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**Casico FR4807****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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