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:

BS 7655 LTS3
EN 50173
EN 50290-2-27
EN 50363-8 TM7
IEC 60227
VDE 0207 Teil 24 (HM2)
VDE 0250 Teil 215

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

Physical Properties

Property	Typical Value Data should not be used for specification work	Test Method
Density (Compound) [1]	1150 kg/m3	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

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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/cm2	IEC 60811-1-3

[1] Compound
[2] Cable (0.7 mm insulation over 1.5 mm² solid Cu)

Electrical Properties

Property	Typical Value Data should not be used for specification work	Test Method
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] Compound
[2] Cable (0.7 mm insulation over 1.5 mm² solid Cu)

Combustion Properties

Property		Typical Value Data should not be used for specification work	Test Method
Limited Oxygen Index [1]		34 %	
NBS Smoke Data	Optical Smoke Density Dmax	46	ASTM E 662-83
(76x76x0.7 mm plaque)	Time to Dmax	6 min	
Flaming mode			
NBS Smoke Data	Optical Smoke Density Dmax	54	ASTM E 662-83
(76x76x0.7 mm plaque) Non	Time to Dmax	20 min	
Flaming mode			
Cone Calorimeter (heat flux	Ingition time	134 s	ISO 5660
35 kW/m2, 3 mm plaque)	Average Heat Release	193 kW/m²	
	Max Heat Release	335 kW/m²	
	Heat Combustion	28 MJ/dm3	
	Smoke Obscuration	531 m2/dm3	
	CO	0,026 kg/dm3	
	CO2	1,8 kg/dm3	
Corrosivity of Combustion Fumes [1]		1,8 µS/cm 5,3	IEC 60754-2

[1] Compound

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Processing Techniques
are suitable for most equipment designed for PVC/PE extrusion.

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:	Bulk
	Octabins
	Bags

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 70ºC will normally reduce the moisture content to an acceptable value.

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

Please see our Safety Data 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.

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