

Polyethylene

Casico™ FR6083

Halogen Free Flame Retardant Compound

Description

Casico FR6083 is a thermoplastic, halogen free flame retardant, UV stabilised, natural jacketing compound combined with excellent extrusion properties.

Typical characteristics

Casico FR6083 can be described with following typical characteristics:

- High mechanical strength and toughness
- Superb system ageing compatibility
- Low water permeability
- UV resistance
- Possibility for cable downsizing
- Processability on most PVC/PE extrusion equipment
- No need for pre-drying
- Excellent processing properties

Applications

Casico™ FR6083 is intended for following applications:

Jackets for energy cables

The principle feature of this compound is the high physical strength and toughness. It can be used in areas sensitive to smoke or corrosive and toxic combustion products. For most cable constructions, Casico FR6083 has sufficient flame retardancy to satisfy single wire vertical burning tests.

Specifications

Casico FR6083 is expected to meet the applicable requirements included in the below mentioned standards provided it is processed using sound material handling and processing practices as well as appropriate testing procedures.

- BS 7655 LTS1-4
- EN 50290-2-27
- EN 50363-8 TM7
- HD 603 S1 DMO 1
- HD 620 S2 DMZ 3-5
- IEC 60502 Part 1, Type ST3, ST7
- IEC 60502 Part 2, Type ST3, ST7
- VDE 0207 Teil 24 (HM2, HM4 & HM5)

Physical properties

Property	Typical value *	Unit	Test method
Density	1160	kg/m ³	ISO 1183-1
Melt flow rate (190 °C/2.16 kg)	0.6	g/10min	ISO 1133-1
Hardness, Shore D ¹	53	-	ISO 868
Tensile strength (50 mm/min) ²	14	MPa	ISO 527-2
Tensile strain at break (50 mm/min) ²	500	%	ISO 527-2
Change of tensile properties after ageing 110°C, 7 days ²	≤25	%	IEC 60811-401
Change of tensile properties after ageing 110°C, 10 days ²	≤30	%	IEC 60811-401
Tear resistance	13	N/mm	HD 605 S2
Pressure test at high temperature (110 °C, 6h)	<10	%	IEC 60811-508

¹ 15s
² Measured on extruded tape
 * Data should not be used for specification work

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Electrical properties

Property	Typical value *	Unit	Test method
DC Volume resistivity (23°C)	>10	PΩcm	IEC 62631

* Data should not be used for specification work

Other properties

Property	Typical value *	Unit	Test method
Limiting Oxygen Index ³	26	%	ISO 4589-2
Corrosivity of combustion fumes, pH	>4.3	-	IEC 60754-2
Corrosivity of combustion fumes, Conductivity	<10	μS/mm	IEC 60754-2
Single vertical flame test	Pass	-	IEC 60332-1

* Data should not be used for specification work

³ Specimen type IV

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 tooling is preferred. Whichever type of tooling is used, the die should preferably have a parallel land of length equal to the final cable diameter.

Processing setting	Typical value/range
Barrel temperature	160 - 170 - 180 - 190 °C
Die temperature	190 °C

The actual conditions will depend on the type of equipment used.

Casico FR6083 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.

Packaging and storage

Casico FR6083 should be stored indoors at temperatures between 10 - 30°C in unopened original packages in clean and dry environment, protected from sunlight. Following above-mentioned conditions the material can be safely stored for a period of up to 24 months after date of production.

Product compliance documents

Latest versions of product safety information sheets (PSIS), product safety data sheets (SDS) and other product liability documents are available in our website www.borealisgroup.com.

Sustainability aspects

Borealis is ever mindful of the impact of our products on the planet. We promote Design for Circularity (DfC) and Design for Recycling (DfR) to conserve natural resources and to reduce the environmental impact of products over their entire lifetime (including production, use phase and after phase). DfR helps ensure that material can be effectively recycled while maximizing the material performance efficiency. Further information on sustainability and Design for Recycling (DfR) can be found from our websites www.borealisgroup.com and www.borealiseverminds.com.

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