Polyethylene

# Casico™ FR6083

Reduced Fire Hazard Jacketing Compound for Energy Cables

## Description

**Casico FR6083** 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%.

## Applications

**Casico FR6083** is designed for:

Jacket 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** meets the applicable requirements as below when processed using sound extrusion practice and testing procedure:

ISO 1872-PE, KGHN, 33-D003

ASTM D 1248 Type II, Class A, Category 4

The following cable material standards are met by Casico FR6083:

EN 50290-2-27
EN 50363-8 TM7

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

Cables manufactured with Casico FR6083 using sound extrusion practice normally comply with the following cable product standards:

IEC 60502, Part 1, Type ST3, ST7
IEC 60502, Part 2, Type ST3, ST7

HD 603 S1 DMO 1
HD 620 S2 DMZ 3-5

## Special features

**Casico FR6083** consists of specially selected components to offer:

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 normally
Excellent processing properties

HongRong Engineering Plastics Co.,Ltd.
Head Office Tel. +85-2-6957-5415
Research Center Tel.+188 1699 6168

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# Polyethylene
# Casico FR6083

## Physical Properties

| Property | Typical Value<br>Data should not be used for specification work | Test Method |
|---|---|---|
| Density [1] | 1160 kg/m³ | ISO 1872-2/ISO 1183 |
| Melt Flow Rate (190 °C/2,16 kg) [1] | 0,6 g/10min | ISO 1133 |
| Tensile Strain at Break [1] | 500 % | IEC 60811-1-1 |
| Tensile Strength (50 mm/min) [1] | 15 MPa | IEC 60811-1-1 |
| Retention of Tensile Properties After Ageing (7 d, 110 °C) | 15 % | IEC 60811-1-2 |
| Hardness, Shore D ( 15 s) [1] | 53 | ISO 868 |
| Pressure Test at High Temperature (105 °C, 6 h) | 5 % | IEC 60811-3-1 |
| Pressure Test at High Temperature (115 °C, 6 h) | 15 % | IEC 60811-3-1 |
| Cold Bend (-40 °C) | Pass | |
| Cold Impact (-40 °C) | Pass | |

[1] Compound

## Electrical Properties

| Property | Typical Value<br>Data should not be used for specification work | Test Method |
|---|---|---|
| Volume Resistivity [1] | 18 POhm.cm | IEC 60093 |

[1] Compound

## Combustion Properties

| Property | Typical Value<br>Data should not be used for specification work | Test Method |
|---|---|---|
| Limited Oxygen Index [1] | 28 % | ISO 4589A |
| Corrosivity of Combustion Fumes | 7 µS/cm | IEC 60754-2 |
| Corrosivity of Combustion Fumes [2] | 5,8 | IEC 60754-2 |
| Single Vertical Flame Test | Pass | IEC 60332-1 |

[1] Compound
[2] Acidity (pH)

## Processing Techniques

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

Most equipment designed for PVC/ PE extrusion is equally suitable for this product.

| | |
|---|---|
| Barrel 1 | 160 °C |
| Barrel 2 | 170 °C |
| Barrel 3 | 180 °C |

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| | |
|---|---|
| Barrel 4 | 190 °C |
| Die | 190 °C |

## Packaging

Package: Octabins

## Storage

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

## Safety

The product is not classified as dangerous.

Please see our "Safety data sheet" / "Product safety information sheet" for details on various aspects of safety of the product.

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