

Borealis Casico™ FR4804 Non-Halogen Flame Retardant Compound for Low Voltage Insulation and Jacketing

Category : Polymer , Thermoplastic , Polyolefin

Material Notes:

Borstar FR4804 is a natural, thermoplastic polyolefin compound designed for flame retardant low voltage wire insulation and jacketing. As such, FR4804 offers a unique combination of good extrusion properties with a non-halogen flame retardant. FR4804 is specifically formulated for use in areas sensitive to smoke, corrosive fumes and toxic combustion products. Its flame retardant properties are conferred by a patented combination of inorganic filler and a novel, char-forming additive. FR4804 is readily pigmented to a variety of colors using standard wire & cable color concentrates designed for thermoplastic or crosslinked polyethylene. UV weather resistance is obtainable by the addition of a suitable carbon black or UV additive. Borstar FR4804 is intended to be used as a 90°C rated jacket for data cables. In addition it may also be used as a superior insulation or jacketing compound in PVC replacement applications. For most cable constructions FR4804 has sufficient flame retardant properties to satisfy single wire horizontal and European vertical burning flame tests. It is stabilized for use in contact with copper. Information provided by the Manufacturer.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Borealis-Casico-FR4804-Non-Halogen-Flame-Retardant-Compound-for-Low-Voltage-Insulation-and-Jacketing.php

Physical Properties	Metric	English	Comments
Density	1.15 g/cc	0.0415 lb/in ³	Compound; ASTM D792
Melt Flow	0.40 g/10 min @Load 2.16 kg, Temperature 190 °C	0.40 g/10 min @Load 4.76 lb, Temperature 374 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	39	39	ASTM D2240
Tensile Strength, Yield	>= 8.83 MPa	>= 1280 psi	Cable at 100°C, 10 days; ASTM D638
	11.0 MPa	1600 psi	Cable - At 2 inch/min; ASTM D638
Elongation at Break	400 %	400 %	Cable; ASTM D638
Flexural Modulus	0.205 GPa	29.7 ksi	ASTM D790

Thermal Properties	Metric	English	Comments
NBS Smoke Density	71	71	Non-Flaming Mode; ASTM E 662
	72	72	Flaming Mode; ASTM D662
Oxygen Index	35 %	35 %	ASTM D2863

Electrical Properties	Metric	English	Comments
Electrical Resistivity	4.50e+16 ohm-cm	4.50e+16 ohm-cm	Compound; ASTM D257
Dielectric Strength	>= 19.7 kV/mm	>= 500 kV/in	Compound; ASTM D149
Dielectric Breakdown	40000 V	40000 V	ISO 6722

Processing Properties	Metric	English	Comments
Middle Barrel Temperature	>= 160 °C	>= 320 °F	
Front Barrel Temperature	>= 130 °C	>= 266 °F	
Die Temperature	>= 168 °C	>= 335 °F	
Head Temperature	>= 170 °C	>= 338 °F	

Descriptive Properties	Value	Comments
Average Rate of Heat Release, kW/m ²	177	ASTM E 1354, Cone Calorimeter (heat flux 35 kW/m ²)
CO, kg/dm ³	0.025	ASTM E 1354, Cone Calorimeter (heat flux 35 kW/m ²)
CO ₂ , kg/dg ³	1.8	ASTM E 1354, Cone Calorimeter (heat flux 35 kW/m ²)
Corrosivity of Combustion Fumes, uS/cm	1.5	IEC 754-2
Heat of Combustion, MJ/dm ³	28	ASTM E 1354, Cone Calorimeter (heat flux 35 kW/m ²)
Ignition Time, sec	150	ASTM E 1354, Cone Calorimeter (heat flux 35 kW/m ²)
Insulation Resistance Megaohm -cm	10000	IEC 227-2/2.4, 28 mil insulation on 16AWG Cu
Maximum Rate of Heat Release, kW/m ²	319	ASTM E 1354, Cone Calorimeter (heat flux 35 kW/m ²)
Pressure Test at High Temp, %	9	IEC 811-3-1, Cable - Pressure Test at High Temperature(90°C, 4 hours)
Smoke Obscuration, m ² /dm ³	447	ASTM E 1354, Cone Calorimeter (heat flux 35 kW/m ²)
Time to Dm (max) min	20	ASTM E 662, Non-Flaming Mode
Time to Dm (max), min	13	ASTM E 662, Flaming Mode
Water Absorption, mg/cm ²	0.1	UL 1581, At 70°C, 14 days

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