

Borealis Casico™ FR4802 Non-Halogen Flame Retardant Insulation/Jacketing Compound

Category : Polymer , Thermoplastic , Polyolefin

Material Notes:

Borstar FR4802 is a natural, thermoplastic polyolefin compound designed for flame retardant low voltage wire insulation and jacketing. As such, FR4802 offers a unique combination of good extrusion properties with a non-halogen flame retardant. FR4802 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. FR4802 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 FR4802 is intended to be used as a 90°C rated jacket for power cables, flexible cords and building wires. In addition it may also be used as a superior insulation or jacketing compound in PVC replacement applications. For most cable constructions FR4802 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-FR4802-Non-Halogen-Flame-Retardant-InsulationJacketing-Compound.php

Physical Properties	Metric	English	Comments
Density	1.15 g/cc	0.0415 lb/in ³	Compound; ASTM D792
Melt Flow	0.80 g/10 min @Load 2.16 kg, Temperature 190 °C	0.80 g/10 min @Load 4.76 lb, Temperature 374 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	40	40	ASTM D2240
Tensile Strength, Yield	>= 10.5 MPa	>= 1520 psi	Cable at 100°C, 10 days; ASTM D638
	13.1 MPa	1900 psi	Cable - At 2 inch/min; ASTM D638
Elongation at Break	550 %	550 %	Cable; ASTM D638
Flexural Modulus	0.215 GPa	31.2 ksi	ASTM D790

Thermal Properties	Metric	English	Comments
NBS Smoke Density	49	49	Flaming Mode; ASTM E 662
	104	104	Non-Flaming Mode; ASTM E 662
Oxygen Index	32 %	32 %	ASTM D2863

Electrical Properties	Metric	English	Comments
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Electrical Properties	Metric	English	Comments
Dielectric Strength	≥ 19.7 kV/mm	≥ 500 kV/in	Compound; ASTM D149
Dielectric Breakdown	36000 V	36000 V	ISO 6722
Dissipation Factor	0.0039	0.0039	Compound; ASTM D150

Processing Properties	Metric	English	Comments
Middle Barrel Temperature	≥ 180 °C	≥ 356 °F	
Front Barrel Temperature	≥ 130 °C	≥ 266 °F	
Die Temperature	≥ 190 °C	≥ 374 °F	
Head Temperature	≥ 190 °C	≥ 374 °F	

Descriptive Properties	Value	Comments
Average Rate of Heat Release, kW/m ²	244	ASTM E 1354, Cone Calorimeter (heat flux 35 kW/m ²)
CO, kg/dm ³	0.023	ASTM E 1354, Cone Calorimeter (heat flux 35 kW/m ²)
CO ₂ , kg/dg ³	1.7	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	29	ASTM E 1354, Cone Calorimeter (heat flux 35 kW/m ²)
Ignition Time, sec	125	ASTM E 1354, Cone Calorimeter (heat flux 35 kW/m ²)
Insulation Resistance Megaohm -cm	3200	IEC 227-2/2.4, 28 mil insulation on 16AWG Cu
Maximum Rate of Heat Release, kW/m ²	400	ASTM E 1354, Cone Calorimeter (heat flux 35 kW/m ²)
Pressure Test at High Temp, %	50	IEC 811-3-1, Cable - Pressure Test at High Temperature(90°C, 4 hours)
Smoke Obscuration, m ² /dm ³	520	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	6	ASTM E 662, Flaming Mode
Water Absorption, mg/cm ²	0.1	UL 1581, At 70°C, 14 days

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