

Borealis Casico™ FR4820 Natural Low Smoke Zero Halogen Flame Retardant Insulation Compound for Building Energy Cables

Category : Polymer , Thermoplastic , Polyethylene (PE)

Material Notes:

Casico™ FR4820 is a thermoplastic, low smoke zero halogen (LSZH) flame retardant, UV stabilized, natural insulation 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: 70°C rated insulation for building wires (installation cables), flexible cords, and power cables. It can be used in areas sensitive to smoke or corrosive and toxic combustion products. Casico™ FR4820 is stabilized for use in contact with copper. Specifications: Casico™ FR4820 in combination meets the applicable requirements as below when processed using extrusion practice and testing procedure: EN 50292-2-26; EN 50363-7 T16; and EN 50363-7 T17. Information provided by Borealis AG

Order this product through the following link:

http://www.lookpolymers.com/polymer_Borealis-Casico-FR4820-Natural-Low-Smoke-Zero-Halogen-Flame-Retardant-Insulation-Compound-for-Building-Energy-Cables.php

Physical Properties	Metric	English	Comments
Density	1.15 g/cc	0.0415 lb/in ³	compound; ISO 1872-2/ISO 1183
Water Absorption	0.0087 % @Time 1.21e+6 sec	0.0087 % @Time 336 hour	70°C, .1 mg/cm ² ; IEC 60811-1-3
Melt Flow	0.90 g/10 min @Load 2.16 kg, Temperature 190 °C	0.90 g/10 min @Load 4.76 lb, Temperature 374 °F	ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	40	40	15s; ISO 868
Tensile Strength at Break	<= 2.60 MPa	<= 377 psi	after aging, 240h, 100°C; or UV aging
	13.0 MPa	1890 psi	50mm/min; IEC 60811-1-1
Elongation at Break	<= 110 %	<= 110 %	after aging, 240h, 100°C; or UV aging
	550 %	550 %	ISO 527
Flexural Modulus	0.215 GPa	31.2 ksi	ISO 178

Thermal Properties	Metric	English	Comments
Maximum Service Temperature, Air	200 °C	392 °F	ISO 4589-3
Brittleness Temperature	<= -60.0 °C	<= -76.0 °F	ISO 974
NBS Smoke Density	49	49	6 min; flaming mode; 76x76x.7mm

Thermal Properties	Metric	English	Comments
	184	184	20 min, non-flaming mode; 76x76x.7mm
Oxygen Index	27 %	27 %	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+6 ohm-cm	1.00e+6 ohm-cm	IEC 60093
Dielectric Strength	<= 20.0 kV/mm	<= 508 kV/in	IEC 60243
Dielectric Breakdown	36000 V	36000 V	ISO 6722

Processing Properties	Metric	English	Comments
Zone 1	160 °C	320 °F	
Zone 2	170 °C	338 °F	
Zone 3	180 °C	356 °F	
Zone 4	190 °C	374 °F	
Die Temperature	190 °C	374 °F	

Descriptive Properties	Value	Comments
Average Heat Release, kW/m ²	244	ISO 5660; Cone Calorimeter (heat flux 35 kW/m ²), 3mm plaque
CO, kg/dm ³	0.023	ISO 5660; Cone Calorimeter (heat flux 35 kW/m ²), 3mm plaque
CO ₂ , kg/dm ³	1.7	ISO 5660; Cone Calorimeter (heat flux 35 kW/m ²), 3mm plaque
Cold Bend (-40°C)	Pass	IEC 60811-1-4
Cold Impact(-40°C)	Pass	IEC 60811-1-4
Corrosivity of Combustion Fumes	1.5	IEC 60754-2
Dielectric Duration	Pass	IEC 60227-2/2.3
Heat Combustion, MJ/dm ³	29	ISO 5660; Cone Calorimeter (heat flux 35 kW/m ²), 3mm plaque
High Temperature Pressure Test, %	< 50%	90°C, 4 hours, IEC 60811-1-4
Ignition Time, sec	125	ISO 5660; Cone Calorimeter (heat flux 35 kW/m ²), 3mm plaque
Max Heat Release, kW/m ²	400	ISO 5660; Cone Calorimeter (heat flux 35 kW/m ²), 3mm plaque
Smoke Obscuration, m ² /dmm ³	520	ISO 5660; Cone Calorimeter (heat flux 35 kW/m ²), 3mm plaque

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