

Casico™ FR4804

Polyethylene
Borealis AG

Message:

Casico FR4804 is a thermoplastic, low smoke zero halogen (LSZH) flame retardant, UV stabilised, natural jacketing 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.

It can be used in areas sensitive to smoke or corrosive and toxic combustion products.

Casico FR4804 meets the applicable requirements below using sound commercial extrusion practice and testing procedures:

BS 7655 LTS2
EN 50173
EN 50290-2-27
EN 50363-8 TM7
IEC 60227
VDE 0207 Teil 24 (HM2, HM4 & HM5)
VDE 0250 Teil 215

General Information	
Filler / Reinforcement	Filler
Additive	Flame Retardant
	UV Stabilizer
Features	Flame Retardant
	Good Colorability
	Good Corrosion Resistance
	Good Processability
	Good UV Resistance
	Halogen Free
	Low Smoke Emission
	Low Toxicity
	Moisture Resistant
Uses	Cable Jacketing
	Wire & Cable Applications
Agency Ratings	BS 7655 LTS2
	EN 50173
	IEC 60227
	VDE 0207 Teil 24 (HM2, HM4 & HM5)
Appearance	Natural Color
Forms	Granules
Processing Method	Extrusion

Physical	Nominal Value	Unit	Test Method
Density ¹	1.15	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) ² (190°C/2.16 kg)	0.40	g/10 min	ISO 1133
Water Absorption (70°C) ³	0.100	mg/cm ²	IEC 60811-1-3
Cold Bend (-40°C) ⁴	Pass		IEC 60811-1-4
Cold Impact (-40°C) ⁵	Pass		IEC 60811-1-4
NBS Smoke Density			ASTM E662
-- ⁶	71.0		
-- ⁷	72.0		
time to Dmax ⁸	13.0	min	
time to Dmax ⁹	20.0	min	
Breakdown Duration ¹⁰	Pass		IEC 60227-2/2.3
Breakdown Voltage ¹¹	60000	V	ISO 6722
Cone Calorimeter			ISO 5660
Average Heat Release ¹²	177	kW/m ²	
CO ¹³	0.250	kg/m ³	
CO ₂ ¹⁴	1.80	kg/m ³	
Heat Combustion ¹⁵	28.0		
Ignition time ¹⁶	2.5	min	
Max Heat Release ¹⁷	319	kW/m ²	
Smoke Obscuration ¹⁸	447		
Corrosion - of Combustion Fumes ¹⁹	1.50	µS/cm	
Pressure Test (90°C) ²⁰	9.0	%	IEC 60811-3-1
Hardness	Nominal Value	Unit	Test Method
Shore Hardness ²¹ (Shore D, 15 sec)	39		ISO 868
Mechanical	Nominal Value	Unit	Test Method
Tensile Stress (Yield)	11.0	MPa	IEC 60811-1-1
Tensile Strain ²² (Break)	500	%	IEC 60811-1-1
Flexural Modulus ²³	205	MPa	ISO 178
Aging	Nominal Value	Unit	Test Method
Change in Tensile Stress			IEC 60811-1-2
-- ²⁴	> -80	%	
100°C, 240 hr ²⁵	> -80	%	
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity ²⁶	4.5E+16	ohms · cm	IEC 60093
Electric Strength	20	kV/mm	IEC 60243-1
Flammability	Nominal Value	Unit	Test Method
Oxygen Index	35	%	
Extrusion	Nominal Value	Unit	
Drying Temperature	70.0	°C	
Drying Time	4.0	hr	

Cylinder Zone 1 Temp.	120	°C
Cylinder Zone 2 Temp.	140	°C
Cylinder Zone 3 Temp.	160	°C
Cylinder Zone 4 Temp.	170	°C
Die Temperature	170	°C
NOTE		
1.	Compound, ISO 1872-2	
2.	Compound	
3.	Cable (0.7 mm insulation over 1.5 mm ² solid Cu), 14 days	
4.	Cable (0.7 mm insulation over 1.5 mm ² solid Cu)	
5.	Cable (0.7 mm insulation over 1.5 mm ² solid Cu)	
6.	Non- flaming mode, Optical Smoke Density Dmax, (76x76x0.7 mm plaque)	
7.	Flaming mode, Optical Smoke Density Dmax, (76x76x0.7 mm plaque)	
8.	Flaming mode, Optical Smoke Density Dmax, (76x76x0.7 mm plaque)	
9.	Non-flaming mode, Optical Smoke Density Dmax, (76x76x0.7 mm plaque)	
10.	Cable (0.7 mm insulation over 1.5 mm ² solid Cu)	
11.	Cable (0.7 mm insulation over 1.5 mm ² solid Cu)	
12.	heat flux 35 kW/m ² , 3 mm plaque	
13.	heat flux 35 kW/m ² , 3 mm plaque	
14.	heat flux 35 kW/m ² , 3 mm plaque	
15.	heat flux 35 kW/m ² , 3 mm plaque, MJ/dm ³	
16.	heat flux 35 kW/m ² , 3 mm plaque	
17.	heat flux 35 kW/m ² , 3 mm plaque	
18.	heat flux 35 kW/m ² , 3 mm plaque, m ² /dm ³	
19.	Compound, 5.3	
20.	at high temperature, 4 hrs, Cable (0.7 mm insulation over 1.5 mm ² solid Cu)	
21.	Compound	
22.	Cable (0.7 mm insulation over 1.5 mm ² solid Cu)	
23.	Compound	
24.	After UV ageing	

25.	Cable (0.7 mm insulation over 1.5 mm ² solid Cu)
26.	Compound

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Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

