Cogegum® GFR/380

Polyolefin

Solvay Specialty Polymers

Message:

Cogegum® XLPO-HFFR - Crosslinkable Halogen Free Fire Retardant compound
Silane grafted compound moisture curable by addition of a catalyst masterbatch (Sioplas® method). It consists of a polyolefin base containing a fire retardant system that contributes to give the cable self-extinguish properties without halogenidric acids evolution, toxic and corrosive gases and dark smoke emission. This material complies with RoHS requirements.
Standard Complying
EN50363-6 EM8, EM10; EN50264 EM101..EM104; IEC60092 SHF2; VDE 0266 HXM1; VDE 0207 HM3; BS 7655 LRS1, SW3, SW4.

General Information	
Features	Low smoke Low toxicity Crosslinkable Fuel resistance Oil resistance Halogen-free Self-extinguishing Flame retardancy
Uses	Cable sheath Wire and cable applications
RoHS Compliance	RoHS compliance

Physical	Nominal Value	Unit	Test Method
Specific Gravity [1]	1.59	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) [2] (190°C/21.6 kg)	8.0	g/10 min	Internal method
Water Absorption			IEC 60811
168 hs : 70°C	3.79	mg/cm²	IEC 60811
24 hs : 100°C	3.33	mg/cm²	IEC 60811
Thermoset [3]			IEC 60811
200°C, maximum permanent elongation after cooling	0.0	%	IEC 60811
Load elongation at break at 200 °C	60	%	IEC 60811
Hot pressing test-Maximum permeability, K = 1(125°C)		%	IEC 60811
Bending test (-40°C)	No cracking		IEC 60811
Halogen-containing acid emission		%	GE
Latent heat energy-High total value	15.5	MJ/kg	ISO 1716
Temperature Index (Combustion)	300	°C	NES 715
Corrosive gases in flue gas			IEC 60754-2

pH	> 4.30		IEC 60754-2
Conductivity		µS/mm	IEC 60754-2
Ring temperature	140 - 150	°C	
Head Temperature	150 - 160	°C	
Environmental Stress-Cracking Resistance (condition a, 50°C, 3.00mm, 10% Igepal, molding)	> 1000	hr	ASTM D1693
Hardness	**Nominal Value**	**Unit**	**Test Method**
Durometer Hardness (Shore D)	38		ISO 868
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Strength (Break)	11.0	MPa	IEC 60811
Tensile Elongation (Break)	180	%	IEC 60811
Aging	**Nominal Value**	**Unit**	**Test Method**
0.5MPa, change of mechanical properties after air bomb aging test, 127°C, 40 hr			IEC 60811
Tensile strength change	-8	%	IEC 60811
Change in tensile elongation	11	%	IEC 60811
Changes in mechanical properties after hot air aging test, 135°C, 168 hr			IEC 60811
Tensile strength change	1	%	IEC 60811
Change in tensile elongation	-10	%	IEC 60811
Flammability	**Nominal Value**	**Unit**	**Test Method**
Oxygen Index	38	%	ASTM D2863
Chemical Resistance	**Nominal Value**	**Unit**	**Test Method**
IRM 902 oil impregnation test, 100°C, 168 hr			IEC 60811
Tensile strength change	-18	%	IEC 60811
Change in tensile elongation	-22	%	IEC 60811
IRM 903 oil impregnation test, 70°C, 168 hr			IEC 60811
Tensile strength change	-24	%	IEC 60811
Change in tensile elongation	-26	%	IEC 60811
NaOH solution impregnation test, 23°C, 168 hr			IEC 60811
Tensile strength change	-27	%	IEC 60811
Change in tensile elongation	-8	%	IEC 60811
Oxalic acid impregnation test, 23°C, 168 hr			IEC 60811
Tensile strength change	-12	%	IEC 60811
Change in tensile elongation	20	%	IEC 60811
Additional Information			

Tests reported are performed on pressed or extruded specimens, added with 5% of Catalyst CT/2-OR UV and crosslinked in hot water at 95°C for 6 hoursColoring
EVA or PE based color masterbatches added at 1.2-1.5% by weight; in order to prevent precrosslinking during processing, predrying of colour masterbatch is suggested (4-6 hours at 50-60°C)
Storage
The product must be stored under the following conditions:
closed and undamaged bags
ambient temperature not exceeding 30°C
avoid direct exposure to sunlight and weathering
Product alterations could occur due to extended period of storage
Shelf life: 6 months
Solvay Specialty Polymers accepts no liability of any kind in case the above mentioned conditions are not fulfilled
Packaging
25 kg moisture-resistant bags on 1375 kg pallet

Extrusion	Nominal Value	Unit
Cylinder Zone 1 Temp.	100 - 120	°C
Cylinder Zone 2 Temp.	110 - 130	°C
Cylinder Zone 3 Temp.	130 - 150	°C
Cylinder Zone 4 Temp.	140 - 150	°C
Die Temperature	150 - 170	°C

Extrusion instructions

Processing
COGEGUM® GFR/380 pregrafted base must be added with Catalyst CT/2-OR UV masterbatch to promote curing. Catalyst dosage is 5% by weight and blending must be done just before using (2-3 hours max.), preferably in the extruder hopper. Catalyst doesn't need any predrying if stored in dry conditions in the original closed bags; in case, predrying can be made at 50-60°C for 4-8 hours
The pregrafted base compound is sensible to moisture; open bags must be used within 4 hours. Pregrafted base cannot be predried
Extrusion equipment
standard extruders for thermoplastics equipped with low compression screw (1:1.2-1.4 compression ratio and 25 L/D ratio are suggested), and an adequate barrel thermoregulation
don't use screw thermoregulation
filter net: none
compression tools suggested
Curing
by immersion in hot water at 60-70°C
by exposure in ambient, crosslinking time depends on ambient temperature and relative humidity
in all cases curing time depends on insulation thickness; for 0.7-1.2 mm wall thickness 3-6 hours are generally necessary in case of forced curing in hot water

NOTE	
1.	23°C
2.	The test was performed without adding catalyst MB
3.	20 N/cm^2

Recommended distributors for this material

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