Cogegum® GFR/340-HP

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
EN 50363-0 G10; EN50363-5 EI8; EN50363-6 EM10; IEC 60092/351 HF90; Cenelec HD 624.6; VDE 0266 HXI1, HXM1; VDE 0250 HI3; VDE 0207 HJ1, HM1

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

Physical	Nominal Value	Unit	Test Method
Specific Gravity [1]	1.35	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) [2] (190°C/21.6 kg)	4.0	g/10 min	Internal method
Water absorption rate-24 hours(100°C)		mg/cm²	IEC 60811
Impact test (-40°C)	Pass		IEC 60811
Thermoset [3]			IEC 60811
250°C, maximum permanent elongation after cooling	0.0	%	IEC 60811
250°C, load elongation at break	50	%	IEC 60811
Hot air shrinkage-1 hour(120°C)		%	IEC 60811
Hot pressing test			IEC 60811
Maximum permeability, K = 0.6: 140°C		%	IEC 60811
Maximum permeability, K = 1: 150°C		%	IEC 60811
Bending test (-40°C)	Pass		IEC 60811
Insulation resistance constant			IEC 60502
20°C	5000	Mohms·km	IEC 60502
90°C	2000	Mohms·km	IEC 60502

Halogen-containing acid emission		%	IEC 60754-1
Latent heat energy-High total value	19.4	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	160 - 180	°C	
Head Temperature	160 - 180	°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)	36		ISO 868
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Strength (Break)	12.0	MPa	IEC 60811
Tensile Elongation (Break)	240	%	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	16	%	IEC 60811
Change in tensile elongation	-10	%	IEC 60811
Changes in mechanical properties after hot air aging test, 150°C, 240 hr			IEC 60811
Tensile strength change	12	%	IEC 60811
Change in tensile elongation	-4	%	IEC 60811
Electrical	**Nominal Value**	**Unit**	**Test Method**
Volume Resistivity			IEC 60502
20°C	1.3E+15	ohms·cm	IEC 60502
90°C	5.4E+14	ohms·cm	IEC 60502
Flammability	**Nominal Value**	**Unit**	**Test Method**
Oxygen Index	31	%	ASTM D2863
Chemical Resistance	**Nominal Value**	**Unit**	**Test Method**
NaOH solution impregnation test, 23°C, 168 hr			IEC 60811
Tensile strength change	-1	%	IEC 60811
Change in tensile elongation	-19	%	IEC 60811
Oxalic acid impregnation test, 23°C, 168 hr			IEC 60811
Tensile strength change	-4	%	IEC 60811
Change in tensile elongation	-12	%	IEC 60811
Additional Information			

Tests reported are performed on pressed or extruded specimens, added with 5% of Catalyst CT/5-LR 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: 9 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
750 kg carton box

Extrusion	Nominal Value	Unit
Cylinder Zone 1 Temp.	130 - 150	°C
Cylinder Zone 2 Temp.	140 - 160	°C
Cylinder Zone 3 Temp.	140 - 160	°C
Cylinder Zone 4 Temp.	150 - 170	°C
Die Temperature	170 - 220	°C

Extrusion instructions

Processing
Cogegum® GFR/340 HP pregrafted base must be added with CT/5-LR 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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