Cogegum® GFR/320

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 50363-5, EI5 and EI8 type; EN 50363-6, EM10 type; EN 50363-0, G9 and G10 type; IEC 60092/351, HF90 type; Cenelec HD 624-6; VDE 0266, HXI1 and HXM1 type; VDE 0250, HI3 type; VDE 0207, HJ1 and HM1 type; UL 44, XL type; UL 758, XL type

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)	4.8	g/10 min	Internal method
Water Absorption			IEC 60811
168 hs : 70°C	0.170	mg/cm²	IEC 60811
24 hs : 100°C	0.500	mg/cm²	IEC 60811
Thermoset [3]			IEC 60811
250°C, maximum permanent elongation after cooling	5.0	%	IEC 60811
250°C, load elongation at break	45	%	IEC 60811
Hot air shrinkage-1 hour(100°C)		%	IEC 60811
Hot pressing test-Maximum permeability, K = 1(100°C)		%	IEC 60811
Bending test (-40°C)	Pass		IEC 60811
Dielectric Constant	3.70		ASTM D150
Insulation resistance constant			IEC 60502
20°C	2500	Mohms·km	IEC 60502

90°C	100	Mohms·km	IEC 60502
Halogen-containing acid emission		%	IEC 60754-1
Latent heat energy-High (Total)	20.7	MJ/kg	ISO 1716
Temperature Index (Combustion)	280	°C	NES 715
Corrosive gases in flue gas			
pH	> 4.30		GE
Conductivity		µS/mm	IEC 60754-2
Liquid resistance-changes with elongation at break-Immersion in Gasoline for 30 Days(23°C)	10	%	UL 1581
Liquid resistance-as a function of tensile strength-Immersion in Gasoline for 30 Days(23°C)	-3.0	%	UL 1581
Ring temperature	170 - 185	°C	
Head Temperature	180 - 195	°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)	50		ISO 868
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Strength (Break)	13.0	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	10	%	IEC 60811
Change in tensile elongation	-12	%	IEC 60811
Mechanical Properties After Aging in Air Oven, 121°C, 168 hr			IEC 60811
Tensile strength change	13	%	IEC 60811
Change in tensile elongation	-22	%	IEC 60811
Changes in mechanical properties after hot air aging test, 135°C, 168 hr			IEC 60811
Tensile strength change	12	%	IEC 60811
Change in tensile elongation	-16	%	IEC 60811
Changes in mechanical properties after hot air aging test, 150°C, 240 hr			IEC 60811
Tensile strength change	22	%	IEC 60811
Change in tensile elongation	-1	%	IEC 60811
Electrical	**Nominal Value**	**Unit**	**Test Method**
Volume Resistivity			IEC 60502
20°C	6.8E+14	ohms·cm	IEC 60502
90°C	2.7E+13	ohms·cm	IEC 60502
Flammability	**Nominal Value**	**Unit**	**Test Method**

Oxygen Index	36	%	ASTM D2863

Chemical Resistance	Nominal Value	Unit	Test Method
IRM 902 oil impregnation test, 100°C, 96 hr			UL 1581
Tensile strength change	-23	%	UL 1581
Change in tensile elongation	12	%	UL 1581
IRM 902 oil impregnation test, 100°C, 168 hr			IEC 60811
Tensile strength change	-27	%	IEC 60811
Change in tensile elongation	-31	%	IEC 60811
IRM 903 oil impregnation test, 70°C, 168 hr			IEC 60811
Tensile strength change	-20	%	IEC 60811
Change in tensile elongation	-31	%	IEC 60811
NaOH solution impregnation test, 23°C, 168 hr			IEC 60811
Tensile strength change	3	%	IEC 60811
Change in tensile elongation	-5	%	IEC 60811
Oxalic acid impregnation test, 23°C, 168 hr			IEC 60811
Tensile strength change	1	%	IEC 60811
Change in tensile elongation	2	%	IEC 60811

Additional Information	Nominal Value	Unit	Test Method

Tests reported are performed on pressed or extruded specimens, added with 5% of Catalyst CT/5 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.	140 - 150	°C
Cylinder Zone 2 Temp.	150 - 165	°C
Cylinder Zone 3 Temp.	160 - 175	°C
Cylinder Zone 4 Temp.	170 - 185	°C
Die Temperature	210 - 230	°C

Extrusion instructions

Processing
Cogegum® GFR/320 pregrafted base must be added with Catalyst CT/5 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

The information and data on this page are provided by manufacturers and document providers. SHANGHAI SUSHENG assumes no legal liability. It is strongly recommended to verify all technical data with material suppliers before final material selection.All rights belong to the original authors. If any infringement occurs, please contact us immediately.

Recommended distributors for this material

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

WECHAT