

Cogegum® AFR/920-UV

Polyolefin

Solvay Specialty Polymers

Message:

Cogegum® HFFR -Halogen Free Fire Retardant compound

Polyolefin based thermoplastic compound containing a fire retardant system that contributes to give the cable self-extinguish properties without halogenidric acids evolution; furthermore, toxic and corrosive gases emission and smoke generation are particularly reduced. These characteristics make this compound suitable in all applications where the fire behavior of cable materials is one of the main concerns to be considered in establishing a high safety level in public places. This material complies with RoHS requirements.

standard complying

EN 50363-0 M1, M9; EN 50363-7 TI6, TI7; EN 50363-8 TM7; IEC 60502-1 ST8; Cenelec HD 624.7 S1; Cenelec HD 624.6 S1; VDE 0207 HM2, HM4, HM5, HJ2; BS 7655 LTS1, LTS2, LTS3, LTS4; BS 6724; IEC 60092 SHF1; UNE 211002 TIZ1; UNE 21123-4

General Information			
Features	Low smoke		
	Low toxicity		
	Good UV resistance		
	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	1.43	g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (190°C/21.6 kg)	18	g/10 min	Internal method
Water absorption rate-24 hours(100°C)	1.00	mg/cm ²	IEC 60811
Cold shock (-25°C)	Pass		IEC 60811
Thermal shock (150°C)	Pass		IEC 60811
Hot pressing test-Maximum permeability, K = 0.6(90°C)		%	IEC 60811
Bending test (-25°C)	Pass		IEC 60811
Insulation resistance constant			IEC 60502
20°C	3000	Mohms · km	IEC 60502
70°C	200	Mohms · km	IEC 60502
Halogen-containing acid emission		%	IEC 60754-1
Latent heat energy-High (Total)	18.0	MJ/kg	ISO 1716
Temperature Index (Combustion)	280	°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	170 - 180	°C	
Head Temperature	180 - 190	°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)	14.5	MPa	IEC 60811
Tensile Elongation (Break)	190	%	IEC 60811
Aging	Nominal Value	Unit	Test Method
Changes in mechanical properties after hot air aging test, 80°C, 168 hr			IEC 60811
Tensile strength change	5	%	IEC 60811
Change in tensile elongation	-15	%	IEC 60811
Changes in mechanical properties after hot air aging test, 110°C, 168 hr			IEC 60811
Tensile strength change	10	%	IEC 60811
Change in tensile elongation	-12	%	IEC 60811
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity			IEC 60502
20°C	8.1E+14	ohms · cm	IEC 60502
70°C	5.4E+13	ohms · cm	IEC 60502
Flammability	Nominal Value	Unit	Test Method
Oxygen Index	37	%	ASTM D2863
Chemical Resistance	Nominal Value	Unit	Test Method
SAE 20 Oil Impregnation Test, 70°C, 4 hr			IEC 60811
Tensile strength change	15	%	IEC 60811
Change in tensile elongation	-8	%	IEC 60811
UV/VIS radiation exposure test, 65°C, 750 hr ²			ISO 4892-2/A
Tensile strength change	0	%	ISO 4892-2/A
Change in tensile elongation	-7	%	ISO 4892-2/A
Water impregnation test, 70°C, 168 hr			BS 6724
Tensile strength change	-18	%	BS 6724
Change in tensile elongation	-13	%	BS 6724
Hydrocarbon impregnation test, 25°C, 4 hr			CEI 20-34/0-1
Tensile strength change	-8	%	CEI 20-34/0-1
Change in tensile elongation	12	%	CEI 20-34/0-1
Additional Information			

Tests reported are performed on pressed or extruded specimensColoring

EVA or PE based masterbatches added at 1.2-1.5% by weight; in order to avoid scotching problems during processing, predrying of colour masterbatch is suggested if moisture absorption occurred during storage (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 35°C

avoid direct exposure to sunlight and weathering

Product alterations could occur due to extended period of storage

Shelf life: 12 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

1000 kg carton box

Extrusion	Nominal Value	Unit
Cylinder Zone 1 Temp.	130 - 150	°C
Cylinder Zone 2 Temp.	150 - 170	°C
Cylinder Zone 3 Temp.	160 - 180	°C
Cylinder Zone 4 Temp.	170 - 180	°C
Die Temperature	180 - 200	°C

Extrusion instructions

Extrusion equipment

standard extruders for thermoplastics equipped with low compression screw (1:1.2-1.4 compression ratio and 20-25 L/D ratio are suggested), and an adequate barrel thermoregulation

don't use screw thermoregulation

filter net: not necessary; in case, use 40-80 mesh/cm² max. Anyway the use of the breaker plate is advisable, in particular using low compression screws

NOTE

1. 23°C
2. R. h. 50%, at 340 nm, radiation
0.51W/(mnm)

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