

AEI SX-0612:CM601

Crosslinked Polyethylene
AEI Compounds Limited

Message:

Low smoke, low-toxicity, halogen-free, flame-retardant compound for insulation of LV cables and sheathing of all types of cables
This is a low smoke, low fume, fire retardant silane crosslinkable compound, which can be processed like a thermoplastic material at high output rates.
The crosslinking catalyst masterbatch CM601 is mixed with the SX-0612 graft component at an addition rate of between 5 and 10%, the rate dependent upon the extruder residence time.
The compound combines good mechanical, electrical and fire retardant properties to meet demanding insulation specifications such as BS7211 and IEC 60092-351/HF90. This compound can also be used for sheathing of cables which require high levels of fire retardance.

General Information			
Features	Irritant gas low to no		
	Low smoke		
	Low toxicity		
	Crosslinkable		
	Halogen-free		
	Flame retardancy		
Uses	Flame Retardant Insulation		
	Flame Retardant Jacketing		
	Low voltage insulation		
	Cable sheath		
	Wire and cable applications		
Agency Ratings	BS 7211		
	EC 1907/2006 (REACH)		
	IEC 60092 351/HF90		
RoHS Compliance	RoHS compliance		
Forms	Particle		
Processing Method	Extrusion		
Physical	Nominal Value	Unit	Test Method
Density	1.47	g/cm ³	BS 2782 620A
Melt Mass-Flow Rate (MFR) (150°C/21.6 kg)	15	g/10 min	Internal method
Mechanical	Nominal Value	Unit	Test Method
Tensile Stress	14.0	MPa	IEC 60811-1-1
Tensile Strain (Break)	160	%	IEC 60811-1-1
Aging	Nominal Value	Unit	Test Method
Change in Tensile Strength (135°C, 168 hr)	5.0	%	IEC 60811-1-2

Change in Tensile Strain at Break (135°C, 168 hr)	-10	%	IEC 60811-1-2
Thermal	Nominal Value	Unit	Test Method
Deformation (100°C)	35	%	IEC 60811-3-1
Thermoset ¹			IEC 60811-2-1
Elongation under load, 20N/cm ² : 200°C	30	%	IEC 60811-2-1
Permanent elongation after cooling	0.0	%	IEC 60811-2-1
Temperature index	245	°C	ISO 4589-3
Conduction rate-of gases	13.0	μS/cm	IEC 60754-2
Insulation resistance (90°C)	5.0E+9	ohms · cm	IEC 60502
Insulation resistance constant-(K)(90°C)	1.5	Mohms · km	IEC 60502
Corrosive gases in flue gas-pH	4.60		IEC 60754-2
Smoke Density		%	ASTM D2843
Halogen Acid Gas Evolution		%	IEC 60754-1
Head Temperature	160	°C	
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity (90°C)	4.4E+12	ohms · cm	IEC 60502
Flammability	Nominal Value	Unit	Test Method
Oxygen Index	29	%	ISO 4589-2
Additional Information	Nominal Value	Unit	Test Method

Crosslinking or Cure: A satisfactory cure can be obtained either by immersion in hot water or exposure to low pressure steam at a temperature up to 70°C. At the higher 10% addition levels of CM601 catalyst and under the correct conditions a satisfactory cure is possible at ambient temperature and humidity.

Extrusion	Nominal Value	Unit
Cylinder Zone 1 Temp.	130	°C
Cylinder Zone 2 Temp.	140	°C
Cylinder Zone 3 Temp.	145	°C
Cylinder Zone 4 Temp.	150	°C
Melt Temperature	< 160	°C
Die Temperature	160	°C

Extrusion instructions

Many modern thermoplastic extruders will process the material, although a screw designed to give good homogenisation without excessive shear (which could cause unacceptable increases in melt temperature) should be used. An extruder with an L/D ratio (length/diameter) of 15-24 and an extruder screw with a compression ratio 1.2:1 are recommended.

NOTE

1. Cure assessment by hot set test (forced cured at 80°C in water)

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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

