Issued May 2009

CT09-13:CM424

Highly flexible silane crosslinkable low-smoke, low-toxicity, halogen-free compound for insulation and sheathing

A very flexible silane cross-linkable flame-retardant low-smoke halogen-free compound which has been developed to meet the requirements of limited toxic/corrosive fume emission.

This compound is designed for use as both and insulation and sheathing in flexible cords used for appliances. It can also be used as a sheathing material for general power cable use where a combination of high flexibility and good hot deformation characteristics are required.

Test	Test method	Unit	Typical value
Physical properties and mechanical properties			
System Density	BS 2782 Pt. 6 Mtd 620A-D	g/cm^3	1.42
Melt flow rate (2.16kg at 190°C)	AEI Method	g/10min	1.93
Tensile strength	IEC 60811-1-1	N/mm²	8.5
Elongation at break	IEC 60811-1-1	%	270
Typical ageing behaviour after 7 days at 100°C			
Tensile strength	IEC 60811-1-2	%Variation	+22
Elongation at break	IEC 60811-1-2	% Variation	-10
Thermo mechanical properties			
Hot pressure deformation at 80°C	IEC 60811-3-1	-	Pass
Cure assessment			
Hot set (20N/cm² at 200°C)	IEC 60811-2-1	%	40
Hot elongation (20N/cm² at 200°C)	IEC 60811-2-1	%	40
Typical water immersion behaviour after 7 days at 70°C			
Tensile Strength	IEC 60811-1-2	% Variation	-10
Elongation at break	IEC 608-11-1-2	% Variation	-15
Fire and smoke properties			
Oxygen index	BS ISO 4589-2	%	30
Temperature index	BS ISO 4589-3	°c	270

© **AEI Compounds Limited,** Sandwich Industrial Estate, Sandwich, Kent, CT13 9LY
Telephone +44 (0) 1304 616171 Facsimile +44 (0) 1304 616170
Email sales@aeicompounds.co.uk Website www.aeicompounds.com
A division of TT electronics

Whilst this document has been prepared in good faith, AEI Compounds Limited accepts no liability of any kind to any person in respect of its contents or any use made thereof. Neither must it be assumed that any use will not infringe any patent. This document shall not form part of any contract with a customer.

CT09-13:CM424

Recommended processing and handling conditions

Extruder

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 – 2:1 are recommended.

Extruder temperature conditions

As a guide the following temperature profile is recommended:-

Zone 1	Zone 2	Zone 3	Zone 4	Head	Die
130°C	140°C	145°C	150°C	160°C	160°C

This profile will vary slightly depending on extruder type, head design and output.

Screw water temperature 40-60°C

Recommended screen pack 50 (mesh apertures per linear inch) = 300 micron

Head and tool design

The head and tools should be so designed as to allow streamlined flow without the possibility of stagnation of material (where pre-curing could take place). To obtain the optimum in physical properties in the case of tubing tools, the smallest possible draw down ratio is recommended to avoid internal stresses.

Crosslinking or cure

A satisfactory cure can be obtained either by immersion in hot water or exposure to low pressure stream at a temperature up to 65°C.

Catalyst and colour masterbatches

CM424 catalyst masterbatch is normally added at 5% to 95% of CT09-13 graft.

Addition of approved colour masterbatches, including black, up to a maximum of 1%, has no detrimental effect on the properties or crosslinking capability.

It is recommended that all masterbatches, including those containing the catalyst, should be thoroughly dried at 60°C for 8 hours or at 80°C for 4 hours.

Storage & shelf life

CT08/85D normally has shelf life of at least 3 months from the date of manufacture. The storage of silane crosslinkable compounds in cool dry conditions will maximise useful shelf life. Other precautions are:-

- Packaging should remain sealed
- Avoid temperature above 25°C
- Avoid storage outside and in direct sunlight
- Use within 8 hours of opening packaging

Form and packaging

Form – pellets

Packaging – The following possibilities are available:-

- Moisture resistant sacks containing 25kg.
- Boxes with a moisture resistant heat sealed liner containing approximately 125kg, 500kg or 1000kg.

© **AEI Compounds Limited,** Sandwich Industrial Estate, Sandwich, Kent, CT13 9LY
Telephone +44 (0) 1304 616171 Facsimile +44 (0) 1304 616170
Email sales@aeicompounds.co.uk Website www.aeicompounds.com
A division of TT electronics

Whilst this document has been prepared in good faith, AEI Compounds Limited accepts no liability of any kind to any person in respect of its contents or any use made thereof. Neither must it be assumed that any use will not infringe any patent. This document shall not form part of any contract with a customer.