



SX549:CM424 and SX549:CM424-1

125°C rated, silane crosslinkable, low-smoke, halogen free insulation for automotive wiring

A flame retardant low- smoke zero halogen silane crosslinkable compound, curable by exposure to moist conditions and possessing excellent extrusion properties at high output rates. The graft compound SX549 is mixed with a crosslinking catalyst masterbatch CM424 or CM424-1 generally in the ration 95:5.

The SX549:CM424 compound had been specifically developed for use as insulation to satisfy the requirements of automotive industry specifications and has been found to comply with ISO 6722 class C.

| Test | Test method | Unit | Typical value |
|---|--------------------------|-------------------|---------------|
| Physical properties and mechanical properties | | | |
| Density | BS 2782 Pt. 6 Mtd 620A-D | g/cm ³ | 1.36 |
| Tensile strength | IEC 60811-1-1 | N/mm ² | 25 |
| Elongation at break | IEC 60811-1-1 | % | 300 |
| Scrape abrasion (0.35mm ² wire) | ISO 4649 | cycles | 300 |
| Typical ageing behaviour after 3000 hours at 125°C | | | |
| Tensile strength | IEC 60811-1-2 | % Retention | 105 |
| Elongation at break | IEC 60811-1-2 | % Retention | 85 |
| Typical ageing behaviour after 10 day at 155°C | | | |
| Tensile strength | IEC 60811-1-2 | % Retention | 110 |
| Elongation at break | IEC 60811-1-2 | % Retention | 50 |
| Thermo mechanical properties | | | |
| Cold bend test at -40°C | IEC 60811-1-4 | - | Pass |
| Flammability properties | | | |
| Oxygen Index | BS ISO 4589-2 | % | 25 |
| Cure assessment (forced cure at 90°C) | | | |
| Hot set (20N/cm ² at 200°C) | IEC 60800-2-1 | % | 5 |
| Hot elongation (20N/cm ² at 200°C) | IEC 60800-2-1 | % | 75 |

© 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



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Recommended processing and handling conditions

Extruder

An extruder with an L/D ratio (length/diameter) of 15-24 and an extruder screw with a compression ratio 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 |
|--------|--------|--------|--------|-------|-------|
| 145°C | 150°C | 165°C | 180°C | 190°C | 200°C |

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

Screw water temperature 60-70°C

Recommended screen pack 30, 100, 300 (mesh apertures per linear inch) or 600, 150, 600 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 & cure

A satisfactory cure can be obtained either by immersion in hot water or under ambient conditions.

Catalyst and colour masterbatches

CM424 or CM424-1 catalyst masterbatch is normally added at 5% to 95% of SX549 graft and the choice will be based on processing conditions and equipment and recommendations will be made by our sales engineer.

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 and shelf life

SX549 normally has shelf life of at least 4 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.

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