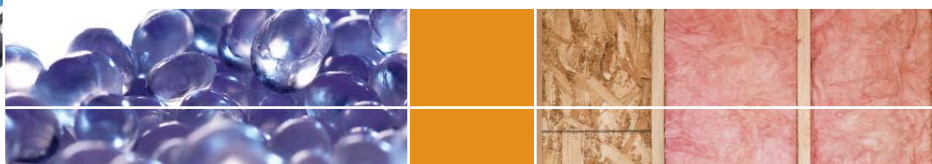


SILCAT* RHE Silane

SILANES - TRADITIONAL



Silcat RHE silane is a crosslinking system (silane, peroxide and catalyst) for the manufacture of crosslinked LLDPE polyethylene LV & MV cables using the Monosil⁽¹⁾ one-step process. It provides excellent performance on equipment designed for Monosil technology.

Key Features and Typical Benefits

- Silcat RHE silane can be used with a wide range of stabilized LLDPE polyethylene grades for optimum cost-effectiveness. This also applies for non-stabilized resin used in association with an antioxidant masterbatch
- a high onset temperature of the silane crosslinking agent improves process stability and minimizes pregrafted/crosslinked particles in the insulation layer

Potential Applications

Low- and medium-voltage power cables.

(1) Maillefer SA and BICC Ltd.

Typical Physical Properties

Appearance	Clear liquid
Color	Light yellow
Viscosity, mPa s (cP), @ 23°C ⁽²⁾	2.2
Specific Gravity, g/cm ³ , @ 23°C	0.962
Flash Point, Tag Closed Cup, ASTM D56-79, °C	23

(2) Brookfield LV/60rpm

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Performance

Recommended Resins

Silcat RHE silane can be used whether with non-stabilized polyethylene resins and an antioxidant masterbatch or with stabilized cable grade resins.

Test carried out have shown that the following resins have given outstanding results:

- Exxon Escorene LLN 1004YB together with an antioxidant masterbatch
- BP 3000 series

Other recommended types are:

LDPE resin:

- Melt index (190°C/2.16 kg) 0.2 to 0.5 g/10 min.
- Density 0.915 to 0.935 g/cm³

LLDPE resin:

- Melt index (190°C/2.16 kg) 0.5 to 6 g/10 min.
- Density 0.900 to 0.935 g/cm³

Processing

Moisture content of the PE resin must be less than 200 ppm. In hot and humid countries pre-drying of the resin at 70°C by means of an air desiccator is highly recommended.

Grafting: Optimum addition levels for a given application must be determined experimentally. Data collected on Nextrom extruders indicates that the dose levels of Silcat RHE silane should be between 0.8 and 1.3 wt %.

Temperature profile setting of the extruder:

- Barrel 150-220°C
- Head and die 230°C
- Screw 70 to 90°C

Crosslinking: Rate of cure is dependent upon time, temperature and thickness of the layer and available moisture. Sufficient crosslinking can be achieved by any of the following methods:

- Immersion in water at 80-90°C, or
- Exposure to low pressure steam at 105°C, or
- Exposure to steam at atmospheric pressure (i.e. a sauna at 100°C)

Patent Status

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute the permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

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Customers must evaluate Momentive Performance Materials products and make their own determination as to fitness of use in their particular applications.

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Europe, Middle East, Africa and India	E cs-eur.silicones@momentive.com	T +00.800.4321.1000	
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	• Thailand	T +662.207.3456	F +66.2207.3488
Worldwide Hotline		T +1.607.786.8131	F +1.607.786.8309
		T +1.800.295.2392	

Visit us at Momentive.com



Momentive Performance Materials
22 Corporate Woods Boulevard
Albany, NY 12211

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