Technical Data Sheet

Silcat™ RHS

Silcat* RHS

Description

Silcat RHS silane is a specially formulated,multi-component crosslinking system (silane, peroxide, catalyst and antioxidants) for use in moisture crosslinking of stabilized polyethylene or ethylenecopolymers. It provides excellent performance on equipment designed for Monosil(1) technology. Silcat RHS silane can provide enhanced stability when shipped or stored at elevated temperatures.

(1) Maillefer SA and BICC Ltd.

Key Features and Benefits

Silcat RHS silane has the following advantages over traditional silane crosslinking systems:

- Improved stability provides a SADT of 78°C for safer shipping and storage. This feature is particularly important in warm climates or for international shipments where the lack of refrigeration/air conditioning may raise safety concerns.
- The Silcat RHS silane formulation may prevent premature crosslinking or may allow higher temperatures at the feed section of the extruder, resulting in faster melting of the resin, better homogenization, and improved grafting efficiency with higher output rates.

Typical Physical Properties

Appearance	Clear liquid
Color	Light yellow
Viscosity, mPa s (cP), @ 23°C(2)	2.5

Specific Gravity, g/cm^3, @ 25°C	0.98
Flash Point, Tag Closed Cup, ASTM D56-79, °C	24

(2) Brookfield LV/60rpm

Potential Applications

Silcat RHS silane contains vinylsilane, peroxide, crosslinking catalysts and stabilizers in a ratio optimized for crosslinking stabilized polyethylene in commercially available one-step extrusion equipment. It is suited for LV and MV cable extrusion.

Patent Status

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Product Safety, Handling and Storage

NEVER STORE THIS PRODUCT ABOVE 55°C (131°F)!

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Processing Recommendations

Moisture-cured cables produced with Silcat RHS silane by the Monosil process can meet the IEC 502 cable specification.

Recommended Resins

Silcat RHS silane must be used with stabilized polyethylene resins or non-stabilized resins in association with the appropriate masterbatch. Recommended types are:

LDPE resin:

- Melt index(190°C/2.16 kg)	0.2 to 3 g/10 min.
- Density	0.915 to 0.925 g/cm^3

LLDPE resin:

- Melt index(190°C/2.16 kg)	2 to 6 g/10 min.
- Density	0.915 to 0.925 g/cm^3

Processing

The moisture content of the compound must be less than 200 ppm. Pre-drying the

compound 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 indicate that the dose levels of Silcat RHS silane should be between 0.8 and 1.8% by weight.

Temperature profile setting of the extruder:

- Barrel	150/150/150/170/190/200/210°C
- Head and die	210/280°C
- Screw	80 to 100°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)

Limitations
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