

# SiPOR-70

## *Dry-Silane Masterbatch*

### INTRODUCTION

SiPOR-70 is delivered in form of solid, free flowing pellets, containing liquid VSS-70, a cross-linking system (include thermal stabilizer and copper inhibitor) developed for use in moisture cross-linking of halogen free flame retardant (HFFR) compounds and semi-conductive compounds for low and medium voltage cables. Our special carrier technology has made it possible to manufacture this highly concentrated batch successfully.

SiPOR-70 is a Masterbatch of VSS-70 in different carriers, which provides significant advantages to your compounding operation:

- Grafting at temperatures below the decomposition temperature of hydrated fillers such as Aluminum trihydrate (ATH) and Magnesium hydroxide  $Mg(OH)_3$ .
- Ensure excellent grafting with ethylene copolymers.
- A hazardous, highly reactive liquid supplied in the form of dry, free flowing granules.
- Safe and accurate dosing and dispersion in continuous compounding operations without the need of expensive injection Pumps.
- Linear extruder output, no slipping effect or squeeze out phenomenon of the silane.

### TYPICAL PHYSICAL PROPERTIES

Product	Carrier Type	Active Silane contents, %	Granule size, mm	Bulk Density ( $Kg/m^3$ )
SiPOR-70-EVA	EVA	40	4.5x2x3	Approx.230
SiPOR-70-LD	LDPE	37	3x3x2.5	Approx.195
SiPOR-70-LL	LLDPE	37	3x3x2.5	Approx.360
SiPOR-70-HD	HDPE	31	3x2x3	Approx. 250

### DOSAGE

Depending on the recipe and type of polymer, an addition level of 1-2% active silane by weight (e.g. SiPOR-70-EVA, an addition of 2.5-5%) is recommended. Optimum addition levels for a given application must be determined experimentally.

Dry Silane Masterbatch is sensitive to humidity; Predrying of the base polymer is recommended to a water contents below 600 ppm. Never dry the dry silane masterbatch!

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### PROCESSING

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Recommended temperature settings are given below depending upon screw design and resin type:

- ☐ Barrel: 100/130/140/150/170°C  
(Note: when using the SiPOR-70-EVA, the following profile is applicable: 80-100/130/140/150/170°C)
- ☐ Head and die: 160~170°C
- ☐ Screw cooling: 70~80°C
- ☐ Feed zone: 40 - 70°C

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

### CROSSLINKING

The rate of cure is dependent upon time, temperature, bobbin size and thickness of the insulation layer and available moisture. The following methods have been found to be satisfactory to reach a crosslinking degree of 50%:

- ☐ Storage at room temperature, approx. 48 hrs. per mm wall thickness
- ☐ Immersion in water at 60 - 90°C, approx. 6 - 8 hrs.
- ☐ Exposure to low pressure steam (0.15 bar) or at atmospheric pressure (i.e. sauna) at 105°C, approx. 6 -8 hrs.

### APPLICATIONS

SiPOR-70 is used for crosslinking of halogen free flame retardant (HFFR) compounds and semi-conductive compounds for low and medium voltage cables..

### PACKING AND STORAGE

It is packaged with 10Kg aluminum foil bags (outside carton box). A period of at least 6 months from date of manufacture can normally be expected. Packages already opened should be used up immediately.

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Store under cool and dry conditions. Due to the decomposition temperature of the dry silane above 70°C, the masterbatch should not be stored or shipped at temperatures above 55°C, since some degradation of product may occur. Direct sunlight exposure and temperatures below 0°C should also be avoided.

### NOTES

All information in the leaflet is based on our present knowledge and experience. We reserve the right to make any changes according to technological progress or further developments. Performance of the product described herein should be verified by testing.

We specifically disclaim any other express or implied warranty of fitness for a particular purpose or merchantability. We disclaim liability for any incidental or consequential damages.

Please send all technical questions concerning quality and product safety to: [support@SiSiB.com](mailto:support@SiSiB.com).