



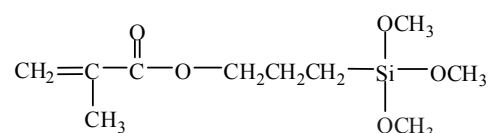
Product information

## LT-570

$\gamma$ -(Methacryl oxyl) propyl tri methoxy silane

### Product description

Structural formula:



Empirical formula: C<sub>10</sub>H<sub>20</sub>O<sub>5</sub>Si

Molecular weight: 248.4

CAS No.: 2530-85-0

Chemical name:

$\gamma$ -(Methacryl oxyl)propyl tri methoxy silane

### Properties

LT-570 is a bifunctional silane possessing a methacrylic organofunctional group and a trimethoxysilyl inorganic group. The dual nature of its reactivity allows it to bind chemically to both inorganic materials (e.g. glass, silica) and organic thermoset resins thus functioning as adhesion promoter, co-monomer for polymer synthesis, crosslinker, and surface modifier. LT-570 is a clear, colorless, light and heat sensitive liquid with a characteristically sweet odor. It is soluble in alcohols, and aliphatic or aromatic hydrocarbons.

### Technical data

Typical characteristics	Value
Appearance	Colorless/Light yellow transparent liquid
Purity	$\geq 97\%$
Density at 25°C	1.045g/ml
Boiling point at 760mmHg	255°C
Flash point, Tag closed cup	108°C
Refractive index (25°C)	1.430

Note: the above data are for reference only, can not be used as a technical specification

### Reactivity

In the presence of water (and an appropriate catalyst such as acetic acid), the LT-570's alkoxy groups hydrolyze to form methanol and reactive silyl groups that bond on the surfaces of various inorganic substrates. Methacryloyl can react with suitable polymers.

Suitable inorganic materials such as glass, glass fiber, glass wool, mineral wool, silica, quartz, sand, calcareous calcium silicate and mica; As well as aluminum hydroxide, kaolin, talc and other silicate fillers, metals and metal oxides.

Suitable resins include unsaturated polyester, acrylic and vinyl.



## Application and performance

LT-570 is used as adhesion promoter in application such as:

- ✧ A constituent of glass fiber sizes (glass fiber fillers for unsaturated polyester resins and polyolefins).
- ✧ A finish for glass fabrics used in unsaturated polyester resins.
- ✧ As a surface modifier for pigments and fillers for thermosets (unsaturated polyester, such as MMA), thermoplastics (such as polyesters and polyolefins) and elastomers.
- ✧ As an additive for filler, peroxide-crosslinked elastomers.
- ✧ As an additive for casting resins (unsaturated polyester, MMA).

LT-570 is either applied to the inorganic substrate as a pretreatment by dipping, spraying, or coating or it may be added directly to the resin matrix (additive process).

For pretreatment, the silane may be used

- ✧ Added directly
- ✧ Dissolved in an organic solvent.
- ✧ Dissolved in a mixture of organic solvent and water for partial hydrolysis.
- ✧ To prepare water-based pretreatment solution by complete hydrolysis in aqueous solution, LT-570 should be dissolved in water at 1-5wt.-% and PH adjusted with acetic acid to 3-4. After complete hydrolysis of silane, if the solution becomes cloudy again, it cannot be used again. Lt-570 can be mixed with resin or polymer beforehand or added with filler in addition process. The precondition of this method is the compatibility between silane and the corresponding resin, so silane must not react with the resin in advance

When used correctly LT-570 can achieve the following properties, for example in a highly-filled unsaturated resin system:

- ✧ Optimum dispersion of the fillers/pigments.
- ✧ Reduction in settling of the fillers/pigments.
- ✧ A reduction in viscosity and improved flow properties of the resin.
- ✧ Improved mechanical properties of the molded products.
- ✧ Improved resistance of the molded products to boiling water, acids and alkalis.

LT-570 can be used as monomer during resin synthesis (e.g. latex dispersions). It may partially replace the methacryl-functional monomers (usually 0.5-3%, but sometimes up to 20%). The thus incorporated silane functionality can lead to improved properties in the final application (e.g. coating or sealant) of such resins:

- ✧ Wet adhesion strength.
- ✧ Chemical resistance.
- ✧ Mar resistance.

## Product safety, handling and storage

Customers considering the use of this product should review the latest Material Safety Data Sheet and label for product safety information, handling instructions, personal protective equipment if necessary, and any special storage condition required. The “Best use before end” date of each batch is shown on the product label. Storage beyond the date specified on the label does not necessarily mean that the product is no longer usable. In this case however, the properties required for the intended use must be checked for quality assurance reasons.



The data presented in this leaflet are in accordance with the present state of our knowledge, but do not absolve the user from carefully checking all supplies immediately on receipt. We reserve the right to alter product constants within the scope of technical progress or new developments. The recommendations made in this leaflet should be checked by preliminary trials because of conditions during processing over which we have no control, especially where other companies' raw materials are also being used. The recommendations do not absolve the user from the obligation of investigating the possibility of infringement of third parties' rights and, if necessary, clarifying the position. Recommendations for use do not constitute a warranty, either express or implied, of the fitness or suitability of the products for a particular purpose.