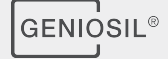


GENIOSIL® GF 56

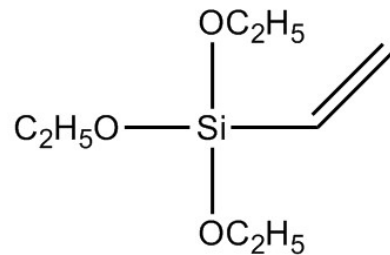


Organofunctional Silanes

Vinyltriethoxysilane

Colourless, clear liquid with a weak characteristic odor. Soluble in organic solvents; not in water.

CAS No. 78-08-0 | Empirical formula $C_8H_{18}O_3Si$ | Molecular weight 190.31 g/mol



Properties

The use of GENIOSIL® GF 56 as a co-monomer in polymers results in binders which, among other advantages, exhibit much improved wet scrub resistance and abrasion resistance thanks to crosslinking and better adhesion to the substrate. Silane-modified thermoplastics obtained by grafting with GENIOSIL® GF 56 can be processed further using standard techniques. On exposure to moisture (e.g. water bath, climatic chamber), the silyl groups condense (ethanol is released) and function as crosslinking and/or adhesion points.

By treating fillers with GENIOSIL® GF 56, mineral-filled polymers can be obtained which exhibit improved mechanical and electrical properties. In addition, the particles are rendered strongly water repellent, which results in improved filler dispersibility and thus facilitates processing.

Organic surface coatings will adhere more strongly to inorganic substrates that have been treated with GENIOSIL® GF 56. As a result, these coatings demonstrate markedly greater scratch resistance and resistance to chemicals.

GENIOSIL® GF 56 is an alkoxyvinylsilane. It's a clear, colorless liquid with a characteristically aromatic odor. It hydrolyzes in the presence of moisture (ethanol is released) to form silanols, which can then react with themselves to produce siloxanes.

As a bifunctional molecule, GENIOSIL® GF 56 is able to function as a molecular bridge between organic and inorganic substrates.

Technical data

General Characteristics

Property	Condition	Value	Method
Boiling point	1013 hPa	158 °C	-
Density	25 °C	0.91 g/cm ³	DIN 51757
Flash point	-	37 °C	ISO 3679
Ignition temperature	-	265 °C	DIN 51794
hydrolyzable chloride (as HCl)	-	< 10 mg/kg	-
purity	-	> 98 %	GC
refractive index	25 °C	1.397	DIN 51423

These figures are only intended as a guide and should not be used in preparing specifications.

All the information provided is in accordance with the present state of our knowledge. Nonetheless, we disclaim any warranty or liability whatsoever and reserve the right, at any time, to effect technical alterations. The information provided, as well as the product's fitness for an intended application, should be checked by the buyer in preliminary trials. Contractual terms and conditions always take precedence. This disclaimer of warranty and liability also applies particularly in foreign countries with respect to third parties' rights.

Comprehensive instructions are given in the corresponding Material Safety Data Sheets. They are available on request from WACKER subsidiaries or may be downloaded via WACKER web site <http://www.wacker.com>.

Applications

- Filler Treatment
- Plastic Additives
- Plastic Crosslinking

Application details

1. General processing information

GENIOSIL® GF 56 dissolves readily in standard organic solvents, but is practically insoluble in neutral water. GENIOSIL® GF 56 hydrolyzes in acidified water (pH approx. 4 - 5) to silanols, the diluted solutions of which remain stable for some time.

2. GENIOSIL® GF 56 as a polymer building block

To incorporate GENIOSIL® GF 56 into organic polymers, it is added as a co-monomer - along with typically used monomers and free-radical initiators (diazo compounds or peroxides) - during production of the solution or emulsion polymer.

Grafting of GENIOSIL® GF 56 to polyolefins, such as LDPE and HDPE, is usually effected via peroxide-initiated reactive extrusion. Polyolefins grafted with GENIOSIL® GF 56 are moisture-cured following molding.

3. GENIOSIL® GF 56 as a coupling agent

Fillers are treated either with pure GENIOSIL® GF 56 or a solution thereof. It may be necessary to pretreat the substrate with water and/or a catalyst.

Subsequent binding of the modified filler to organic polymers is preferably effected via grafting during extrusion.

Used as a primer, GENIOSIL® GF 56 is applied to an inorganic substrate, such as a metal surface, in the form of an aqueous or alcoholic solution. After GENIOSIL® GF 56 has dried and bonded to the surface, an organic coating may be applied using a standard technique.

GENIOSIL® GF 56 is used in the production of silane-modified polymers that serve as binders in paints and adhesives. GENIOSIL® GF 56 is also used in the manufacture of pipes and cables made of silane-crosslinked polyethylene (PE-Xb). In addition, GENIOSIL® GF 56 serves as an adhesion promoter in primers and coatings, and is used in the production of organically modified fillers for cable insulation.

Packaging and storage

Packaging

- 25 kg can
- 180 kg drum
- 800 kg IBC

Storage

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.

Safety notes

Comprehensive instructions are given in the corresponding Material Safety Data Sheets. They are available on request from WACKER subsidiaries or may be printed via WACKER web site <http://www.wacker.com>.

QR Code GENIOSIL® GF 56



For technical, quality or product safety questions, please contact:

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productinformation@wacker.com, www.wacker.com

The data presented in this medium 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 medium 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 information provided by us does 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 product for a particular purpose.