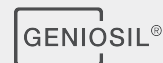


GENIOSIL® GF 91



Organofunctional Silanes

N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane, high purity

Properties

Thanks to the specific reactivity of the 2-aminoethyl-aminopropyl structure, using GENIOSIL® GF 91 as an adhesion promoter in glass-fiber reinforced or fillermodified plastics reduces the filler's sedimentation tendency and improves dispersibility and numerous mechanical properties (e.g. flexural strength, tensile strength, modulus of elasticity) of these composites. The use of GENIOSIL® GF 91 in these materials also results in a markedly improved resistance to water, vapor and corrosion. Electrical properties, such as volume resistivity and the dielectric constant, are also positively influenced. GENIOSIL® GF 91 is an alkoxy silane with an amino-functional group. It's a clear, colorless to light yellow liquid with a characteristic amine odor. Compared to GENIOSIL® GF 9, it is additionally purified by distillation. As a result, it offers extremely high purity and, above all, a very low chloride content. Due to the nature of its amino group, GENIOSIL® GF 91 reacts as a strong base. The silane hydrolyzes autocatalytically in the presence of moisture (methanol is released) to form silanols, which can then react with themselves to produce siloxanes or can bind to inorganic substrates. As a typical amine, GENIOSIL® GF 91 can also interact with numerous organic polymers and thus function as a molecular bridge between organic and inorganic substrates.

Technical data

General Characteristics

Property	Condition	Value	Method
Amine number	-	approx. 8.8 - 9.05 mmol/g	WSTM 1297
Boiling point	16 hPa	147 °C	-
Density	25 °C 1013 hPa	1.02 g/cm ³	DIN 51757
Flash point	-	> 100 °C	EN 22719
Ignition temperature	-	300 °C	DIN 51794
Purity	-	> 96.0 %	-
Refractive index	25.0 °C	1.443	-

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.

Applications

- Building & Construction Adhesives
- Do It Yourself
- Flooring Installation
- Interior Paints & Coatings
- Sealants
- Waterproofing Membranes

Application details

1. General processing information GENIOSIL® GF 91 is highly miscible with organic solvents, such as ethers and hydrocarbons. Mixing with ketones results in imine formation, while mixing with alcohols other than methanol leads to an autocatalytic exchange of alkoxy groups until the system reaches thermodynamic equilibrium. GENIOSIL® GF 91 demonstrates typical amine behavior when exposed to acids, epoxides or isocyanates. GENIOSIL® GF 91 is highly soluble in neutral water. Caution: due to the enthalpy of solution, mixing GENIOSIL® GF 91 with water is exothermic. It is recommended that GENIOSIL® GF 91 is added to water, not vice versa, while stirring. A 2 wt % solution of GENIOSIL® GF 91 in water has a pH of 10 -11 and remains stable for several weeks. Due to the reactive nature of GENIOSIL® GF 91, contact with moisture must be avoided during prevent undesired hydrolysis. 2. GENIOSIL® GF 91 in glass-fiber reinforced or mineral-filled polymers Fillers are treated either with pure GENIOSIL® GF 91 or a solution thereof. It may be necessary to pretreat the substrate with water. The modified filler is preferably bonded to the organic material, e.g. an epoxy resin, by mixing it with a standard amine curing agent. In an alternative procedure referred to as "blending", GENIOSIL® GF 91 is added directly to the polymer - either before the organic materials is compounded with the filler or at the same time. A prerequisite for the blending process is that GENIOSIL® GF 91 and the polymer are compatible and that the resin and GENIOSIL® GF 91 do not react prematurely. 3. GENIOSIL® GF 91 as a surface modifier Used as a primer, GENIOSIL® GF 91 is applied as an aqueous or organic solution to an inorganic substrate (e.g. metal or glass surfaces). Once GENIOSIL® GF 91 has dried and bonded to the surface, an organic coating may be applied using a standard technique (e.g. spraying or knife coating). GENIOSIL® GF 91 is mainly used as a surface modifier for glass fibers, glass-fiber fabrics, fillers (e.g. glass or mineral wool, mica, talc, wollastonite, kaolin, cristobalite, metal oxides) and pigments used in various plastics, including epoxy resins, polyamides, polyacrylates, polyurethanes, ethylene/vinyl acetate copolymers and many others. Other important applications include its uses as an adhesion promoter in polysulfides and phenolic resins for abrasives and insulating materials and as a primer for sealants, adhesives and coatings.

Packaging and storage

Packaging

Information on available container sizes is obtainable from WACKER subsidiaries.

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 91



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

Wacker Chemie AG, Hanns-Seidel-Platz 4, 81737 Munich, Germany
info@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.