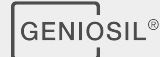


GENIOSIL[®] APTM

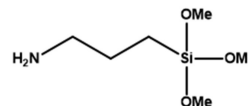


Organofunctional Silanes

3-Aminopropyltrimethoxysilane

GENIOSIL[®] APTM is a clear, colorless liquid with a characteristic amine odor.

CAS No. 13822-56-5 | Empirical formula C₆H₁₇N₁O₃Si | Molecular weight 179.29



Properties

GENIOSIL[®] APTM is an alkoxy silane with an amino-functional group. It's a clear, colorless liquid with a characteristic amine odor. As a bifunctional amine, GENIOSIL[®] APTM can also interact with numerous organic polymers and thus function as a molecular bridge between organic and inorganic substrates.

In addition to its application as an adhesion promoter in formulations and primers, GENIOSIL[®] APTM functions as a surface modifier in fillers and pigments, where it improves the dispersibility of the filler and the mechanical properties - such as flexural strength, tensile strength and modulus - of the composites. The silane also reduces the filler's sedimentation tendency in the uncured polymer. GENIOSIL[®] APTM also greatly increases water (vapor) and corrosion resistance.

Technical data

General Characteristics

Property	Condition	Value	Method
Amine number	-	approx. 5.5 mmol/g	WSTM 1297A
Methanol	-	≤ 0.99 %	-
Purity	-	> 95 %	GC
Refractive index	25 °C	1.424	DIN 51423
Viscosity, kinematic	-	1.6 mm ² /s	-

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

- Adhesives
- Building & Construction Adhesives
- Chemical Industry
- Composites
- Industrial Adhesives
- Industrial Coatings
- Primers for Paints & Coatings
- Sealants
- Thermoplastics & Elastomers

Application details

1. General processing information:

GENIOSIL® APTM is highly miscible with standard 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® APTM shows typical amine behavior when exposed to acids, epoxides or isocyanates.

GENIOSIL® APTM is highly soluble in neutral water and undergoes hydrolysis.

Caution: Due to the enthalpy of solution, mixing GENIOSIL® APTM with water is exothermic. A solution of GENIOSIL® APTM in water has a pH of 10 - 11 and remains stable for several weeks. Due to the highly reactive nature of GENIOSIL® APTM, contact with moisture must be avoided during processing to prevent undesired hydrolysis.

2. GENIOSIL® APTM as a surface modifier:

Fillers are treated either with pure GENIOSIL® APTM 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 curing agent.

In an alternative procedure referred to as "blending", GENIOSIL® APTM 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® APTM and the polymer are compatible and that the resin and GENIOSIL® APTM do not react prematurely.

3. GENIOSIL® APTM as an adhesion promoter in formulations:

In silane crosslinking formulations (e.g. silane-terminated polyethers or polyurethanes and polysiloxanes), GENIOSIL® APTM may be added to the formulation as an adhesion promoter. Processing is effected by means of standard mixing methods. Usually, about 1 - 2 wt % silane is added to the formulation.

GENIOSIL® APTM is used mainly as an adhesion promoter in sealants, adhesives and coatings, and as a surface modifier for fillers (e.g. glass, mineral wool, mica, metal oxides) and pigments used in various plastics, including epoxy resins, polyamides, polyacrylates, polyurethanes, ethyl/vinyl acetate polymers and phenolic resins.

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® APTM



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

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productinformation@wacker.com, www.wacker.com

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