

GENIOSIL[®] STP-E140



Silane-Modified Polymers

alpha, gamma Trimethoxysilylmethylcarbamate-terminated polyether

Properties

GENIOSIL[®] STP-E140 is a polyether-based silane-terminated polymer suitable as a binder in moisture curing formulations. It is a clear liquid with a slight but characteristic odor and differs to conventional silylated polymers due to its high reactivity. This is a direct consequence of the structural proximity of the nitrogen atom to the silicon atom in the trimethoxysilylmethylcarbamate group (alpha-effect). It hydrolyzes in the presence of moisture to finally form a stable siloxane network initiated by mild catalysis as opposed to heavy metal ions. Formulations are characterized by the following advantages:

- simple compounding with conventional auxiliaries
- plasticizer free if desirable
- tin free
- good recovery
- minimal creep
- transparent systems
- good mechanics
- rapid curing
- broad adhesion profile
- long shelf life

Technical data

General Characteristics

Property	Condition	Value	Method
Reactive terminal groups	-	alpha, gamma Trimethoxysilyl alkylcarbamate	-
Methoxy group content	-	~ 2 % by weight	-
Viscosity	-	10000	-

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
- Home-Improvement Gluing
- Industrial Adhesives
- Sealants
- Silane Modified Polymers

Application details

GENIOSIL® STP-E140 dissolves readily in standard organic solvents. It is virtually insoluble in aqueous media, and reacts slowly releasing methanol and forming a resinous deposit. Despite its highly reactive terminal groups, uncatalyzed GENIOSIL® STP-E140 is stable in air for several days. However, its reactivity with water or atmospheric humidity must be taken into account during storage and processing, since the material will slowly start to condense. GENIOSIL® STP-E140 can be formulated by conventional methods and mixing processes. Its formulation composition depends on the required property profile, which are dependent also on the fillers used. The range starts with oxides, such as aluminum hydroxide, quartz powders or pyrogenic silica, and extends to coated and uncoated chalks. The type and amount depends on the mechanical needs as well the desired thixotropy. Water scavengers can be added to stabilize the formulations against premature curing as this is moisture-curing technology. Therefore exclusion of moisture during compounding and storage is necessary. GENIOSIL® XL 10 or GENIOSIL® XL 70 are particularly suitable scavengers. Any kind of plasticizer can be used to further lower the viscosity as well as to impact elongation values. It has been observed that polypropylene glycol types give better mechanical performance whereas aromatic plasticizers like trimellitates or phthalates yield good adhesion values. Antioxidants, UV- and light-stabilizers are mandatory to ensure durable sealants and adhesives. The amount and kind of stabilizer depends on application needs. Curing of GENIOSIL® STP-E140 requires a catalyst that does not necessarily have to be organo-metallic. However dioctyl tin may be used if required. Catalysis can also be accelerated with titanium compounds, as well as inorganic (phosphoric) or organic (tartaric) acids. Primarily, we recommend using an amine catalyst, and adjusting the skin-formation time by varying the amount of aminosilane used. GENIOSIL® GF 9 and GENIOSIL® GF 95 have proven particularly advantageous here. In particular, GENIOSIL® GF 95 can attain improved water resistance, which is further increased by the addition of epoxy silanes. Surface Treatment: always apply the formulation to clean and dry surfaces.

GENIOSIL® STP-E140 is used as a reactive binder for sealants and adhesives, potting compounds and coatings. Curing takes place at ambient temperature in the presence of both moisture and catalyst. Depending on the formulation, either prepared as one-part or two-part systems, shows good adhesion to a wide variety of substrates even without pretreatment. The low glass transition temperature allows stable mechanical properties over a wide temperature range.

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® STP-E140



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

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