

GENIOSIL[®] XT 50



Silane-Modified Polymers

GENIOSIL[®] XT 50 is a silicone-modified 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 dimethoxy(methyl)silyl-methylcarbamate 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.

Properties

- simple compounding with conventional auxiliaries
- low viscosity offers broader formulation latitude without addition of solvents or plasticizers
- tin-free catalysis
- rapid curing to a non-tacky surface
- broad adhesion profile
- long shelf life of end product

Technical data

General Characteristics

Property	Condition	Value	Method
Density	20 °C 1000 hPa	1.05 g/cm ³	DIN 51757
Flash point	-	> 105 °C	ISO 3679
Ignition temperature	-	380 °C	EN 14522
Viscosity, kinematic	20 °C 1 1/S	500 mm ² /s	DIN 51562

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

- Wood-to-Wood Bonding

Application details

GENIOSIL® XT 50 dissolves readily in standard organic solvents. It is virtually insoluble in aqueous media, and reacts slowly releasing methanol and forming a resinous deposit. Due to its reactive terminal groups GENIOSIL® XT 50 forms a skin in air after 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® XT 50 can be formulated by conventional methods and mixing processes. Its composition depends on the required property profile. GENIOSIL® XT 50 can be formulated with a variety of fillers in a very high amount. The range includes metal oxides, such as aluminum hydroxide extending to quartz flours, pyrogenic silica as well as coated and uncoated chalks. The kind and amount depends on the mechanical needs as well the desired thixotropy. Ferric oxides as fillers must be avoided as these lead to undesirable oxidation reactions in the formulation. 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 impacting elongation values. It has been observed, that PPG types give better mechanical performance whereas aromatic plasticizers like trimellitates or phthalates yield good adhesion values. The use of antioxidants, UV- and light-stabilizers is mandatory to ensure durability of the end product. The amount and type of stabilizers depends on application needs and thorough testing of the end product before commercialization is a must. Curing of GENIOSIL® XT 50 requires a catalyst that does not necessarily have to be an organo-metallic compound. However, dioctyl tin compounds may be used if required. Catalysis can also be accelerated with titanium systems, as well as inorganic (phosphoric) or organic (tartaric) acids. Primarily, the use of an amine catalyst is recommended. The skin-formation time can be adjusted by varying the amount and type of the aminosilane. GENIOSIL® GF 9, GENIOSIL® GF 91 and GENIOSIL® GF 96 have proven particularly advantageous here. Moreover GENIOSIL® XT 50 can be blended with any GENIOSIL® silane-terminated polymer in order to modify the performance.

GENIOSIL® XT 50 is used as a reactive binder for elastic sealant & 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<(>,<(> this can exhibit 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. GENIOSIL® XT 50 can be easily formulated to produce compounds of very different viscosities, suitable for waterproofing of vertical as well as horizontal surfaces, including:

- Waterproofing of flat roofs, balconies and patios
- Transparent waterproofing for balconies and patios
- Waterproofing behind tiles
- Waterproofing of interior and exterior basement walls
- Floor primer with water vapor diffusion retarding properties
- Potting compound for horizontal expansion and movement joints

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® XT 50



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

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