GENIOSIL® XM 25

Silane-Modified Polymers

GENIOSIL® XM 25 reflects new silane terminated polymers suitable as reactive diluent in moisture-curing formulations. The technology embrace the typical Wacker portfolio. GENIOSIL® XM 25 belongs to gamma chemistry.

Properties

GENIOSIL® XM 25 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 trimethoxysilyl group attached to the organic backbone. It hydrolyzes in the presence of moisture to finally form a stable siloxane network initiated by heavy metal or strong amine catalysis. Formulations are characterized by the following advantages:

- simple compounding with conventional auxiliaries
- plasticizer free if desirable
- modification to achieve lower Modulus
- very good elastic recovery and high elasticity
- rapid curing
- broad adhesion profile

Technical data

General Characteristics

Property	Condition	Value	Method
Density	20 °C | 1013 hPa	1.006 g/cm^3	specific method
Flash point	-	167 °C	ISO 2719
Ignition temperature	-	377 °C	EN 14522
Viscosity	-	2000	-

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

Applications

- Adhesives
- Building & Construction Adhesives
- Home-Improvement Gluing
- Sealants
- Silane Modified Polymers

Application details

GENIOSIL® XM 25 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® XM 25 forms a skin following exposure to 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® XM 25 can be formulated by conventional methods and mixing processes. The formulation composition depends on the required property profile. GENIOSIL® XM 25 can be formulated with a variety of fillers at high addition ratios. The range starts with oxides, such as aluminum hydroxide, quartz powders or pyrogenic silica, and extends to coated and uncoated chalks. 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 type 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 type of stabilizer depends on application needs. Curing of GENIOSIL® XM 25 requires a catalyst that can either be organo-metallic or a strong base. Here dioctyl tin or titanium compounds have proven their suitability especially in the presence of an aminosilane such as GENIOSIL® GF 96. In particular, GENIOSIL® GF 95 can attain improved water resistance, which is increased by the addition of epoxy silanes. Surface Treatment Always apply the formulation to clean and dry surfaces. GENIOSIL® XM 25 is used as a reactive plasticizer in elastic sealant & adhesives, potting compounds and coatings, that does not migrate out of cured formulations. The adhesion profile of formulated sealants and adhesives was seen to enhance when including this polymer. Additionally it can be used to reduce modulus and is thus suitable for low modulus formulations. Curing takes places at ambient temperature in the presence of both moisture and catalyst. Depending on the formulation, either prepared as one-part or two-part systems, it will give 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® XM 25

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

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