

# GENIOSIL<sup>®</sup> XM 20

## Silane-Modified Polymers

GENIOSIL<sup>®</sup> XM 20 reflects new silane terminated polymers suitable as reactive diluent in moisture-curing formulations. The technology embraces the typical Wacker portfolio. GENIOSIL<sup>®</sup> XM 20 belongs to alpha chemistry.

## Properties

GENIOSIL<sup>®</sup> XM 20 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 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. Formulations are characterized by the following advantages:

- simple compounding with conventional auxiliaries
- plasticizer free if desirable
- modification to achieve lower Modulus
- rapid curing
- broad adhesion profile

# Technical data

## General Characteristics

Property	Condition	Value	Method
Density	25 °C   1013 hPa	1.0004 g/cm <sup>3</sup>	DIN 51757
Flash point	-	156 °C	ISO 2719
Ignition temperature (liquids)	-	379 °C	EN 14522
Polymer	-	silane-terminated polymer	-
Viscosity, kinematic	20 °C	2183 mm <sup>2</sup> /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

- Building & Construction Adhesives
- Sealants
- Adhesives

## Application details

GENIOSIL<sup>®</sup> XM 20 dissolves readily in standard organic solvents. It is virtually insoluble in aqueous media, and reacts slowly releasing methanol and forming a liquid. 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<sup>®</sup> XM 20 can be formulated by conventional methods and mixing processes. The formulation composition depends on the required property profile. GENIOSIL<sup>®</sup> XM 20 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<sup>®</sup> XL 10 or GENIOSIL<sup>®</sup> XL 70 are particularly suitable scavengers. 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<sup>®</sup> XM 20 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 such as GENIOSIL<sup>®</sup> GF 9. Surface Treatment Always apply the formulation to clean and dry surfaces. GENIOSIL<sup>®</sup> XM 20 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 can thereby be greatly enhanced. Additionally, it can be used to reduce modulus and is thus suitable for low modulus formulations. 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, 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 20



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

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