MANTA

Technical Data Sheet

Version: 1.0

Manta MS27

Silane-Terminated Polyether Polymer

Description

Manta MS27 is a silyl-terminated polyether (STPE) with moisture-reactive silyl end groups, designed for moisture-cure formulations. It serves as the base resin for elastic sealants, structural adhesives and protective coatings.

Compared with conventional polyurethane and silicone technologies, MS27-based formulations can be made without solvents and isocyanates. They cure bubble-free with low odor, which improves the working environment, and adhere to a wide range of substrates without a primer.

Performance similar to Kaneka S327.

Typical Physical Properties

Manta Code:	MS27
Chemical Name:	Silyl-terminated polyether (STPE)
Appearance:	Transparent to slightly yellow viscous liquid
Viscosity (25 °C):	28,000 – 38,000 mPa·s
Boiling Point:	> 250 °C
Density (25 °C):	approx. 1.0 g/cm³
Flash Point:	≥ 237 °C
Water Solubility:	Practically insoluble
Activity:	High
Modulus:	Low

Properties

- Reactivity and modulus: high reactivity with low modulus for flexible, stress-relaxing joints.
- Adhesion: dependable bonding on many different substrates.
- Cure: fast curing; tin-free catalysts can be used.
- Outdoor durability: good weathering and yellowing resistance.
- Resistance: good resistance to water and chemicals.
- Recovery: high elastic recovery after repeated movement.
- Shelf life: good storage stability.
- Low emissions: solvent-free with low odor; suitable for low-VOC products.
- Blending: compatible with other polymers for tailored formulations.

Applications

Manta MS27 is used as the main binder in elastic sealants, structural adhesives, potting compounds and protective coatings, formulated as one-component (1K) or two-component (2K) moisture-cure systems:

1. Building: low-modulus sealants for expansion joints and facades.
2. Transportation: elastic bonding and sealing in rail, automotive and specialty vehicles.
3. DIY: user-friendly sealants for consumers.
4. Interior finishing: solvent-free, low-odor decorative sealants.

Processing

Manta MS27 dissolves readily in common organic solvents such as ethanol but hardly in water, so plasticizers, additives and other formulation components should be oil-soluble.

Cure chemistry: the silane end groups react in two stages:

- Hydrolysis: atmospheric moisture converts the silane end groups into reactive silanols.
- Condensation: with a catalyst, the silanols condense to Si–O–Si bonds and build a three-dimensional network.

Moisture control: the uncatalyzed polymer tolerates air for a limited time, but humidity must be controlled. Dry all raw materials and add a moisture scavenger such as vinyltrimethoxysilane (VTMO) to avoid premature gelation and secure shelf life.

Equipment: standard mixers such as planetary mixers are suitable. Contact Manta technical service for formulation support.

Cleaning

Before curing, the product can be removed with common organic solvents such as ethanol or dimethyl carbonate (DMC); after curing it can only be removed mechanically.

Packing

50 kg plastic drum with aluminum-foil liner bag;
200 kg drum with aluminum-foil liner bag;
1,000 kg IBC (tote);
Other pack sizes available on request.

Safety and Storage

Store in the tightly closed original container in a cool, dry place, protected from moisture and direct sunlight. Shelf life: 12 months from the date of production when stored as recommended. The product is classified as non-hazardous. Refer to the current Safety Data Sheet (SDS) for safety, handling and transport information.

Note: The values in this data sheet are typical values and are not intended for use in preparing specifications. Users should test the product to determine its suitability for their specific application.

Contact Information

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