MANTA

Technical Data Sheet

Version: 1.0

Manta MS3303I

Silyl-terminated polyether (STPE), SMP type

Description

Manta MS3303I is an alkoxysilane-terminated polyether (STPE, also known as silane-modified polymer, SMP) with a polypropylene oxide (PPO) backbone. It is designed as a binder for moisture-curing elastic sealants and adhesives that require high flexibility together with fast curing. MS3303I is isocyanate-free, solvent-free and suitable for low-VOC formulations. It cures without bubbles and with low odor, gives a smooth surface and adheres to many substrates without primer. Typical fields of use are construction and transportation; renewable energy applications are subject to testing.

Typical Physical Properties

Manta Code:	MS3303I
Chemical Name:	Silane-terminated polyether
Appearance:	Transparent viscous liquid
Flash Point:	≥ 100 °C
Viscosity (25 °C):	35,000 – 45,000 mPa·s
Activity:	High
Modulus:	Low-medium
Chemical Structure:	

Properties

- High activity, low-to-medium modulus: suited to joints with high movement, with good stress relief and elastic recovery.
- Curing: fast tack-free time and through-cure; compatible with organotin and tin-free (amine) catalysts.
- Transparency and weathering: high transparency with good resistance to UV aging and yellowing.
- Mechanical properties: good bond strength and tensile elasticity; good resistance to water and chemical solvents.
- Storage stability: good shelf-life stability in formulated products.
- Formulation: solvent-free and low odor; can be blended with other Manta polymers to adjust mechanical properties.

Applications

1. Construction and infrastructure: low-modulus expansion joints, curtain-wall sealants and weather-resistant building seals.
2. Transportation: elastic sealing and bonding of vehicle bodies, rail vehicles and marine interiors where vibration damping is required.
3. New energy and electronics: can be evaluated for solar module bonding and as a transparent potting compound for electronic components; suitability must be verified for the specific application.
4. Interior: low-emission DIY sealants and decoration adhesives for indoor use.
5. Coatings: flexible reactive binder for protective coatings on various substrates.

Processing

1. Moisture sensitivity: the alkoxysilane end groups of MS3303I hydrolyze and crosslink on contact with water or atmospheric moisture. Store the polymer in tightly sealed containers and process it under moisture-controlled conditions to avoid premature gelation.
2. Fillers: MS3303I can be compounded with common fillers such as precipitated calcium carbonate (PCC), ground calcium carbonate (GCC), fumed silica, quartz flour, diatomaceous earth and aluminum hydroxide. The polymer content can be adjusted to the required properties.
3. Drying: dry all fillers thoroughly before compounding. Vinyltrimethoxysilane (VTMO) is recommended as a water scavenger.
4. Plasticizers: suitable plasticizers include phthalates (e.g., DINP, DIDP), DOTP and low-molecular-weight polyethers (PPG).
5. Additives: adhesion promoters, antioxidants, fungicides and UV/light stabilizers can be added to adjust the end-use properties.

Typical Performance of a Reference Sample

MS3303I Test Item	Standard	Result
Appearance	Colorless, transparent liquid	Colorless, transparent liquid
Viscosity (25 °C), mPa·s	35,000 – 45,000	39,170
pH Value	6.0 – 9.0	7.0
Tensile Strength, MPa	≥ 0.5	0.58
Elongation at Break, %	≥ 100	117.6
Hardness, Shore A	≥ 25	29

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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