MANTA

Technical Data Sheet

Version: 1.0

Manta MS3303H

Silyl-terminated polyether (STPE), SMP type

Description

Manta MS3303H is an alkoxysilane-terminated polyether (STPE, also known as silane-modified polymer, SMP) with a polypropylene oxide (PPO) backbone. Its silane end groups crosslink rapidly on exposure to humidity and form a siloxane network.
MS3303H is solvent-free, suitable for low-VOC formulations and contains no free isocyanates. Formulations cure without bubbles and with low odor, giving a smooth surface. It is used as a binder in construction, transportation and industrial assembly; new energy applications are subject to testing.
Performance similar to Kaneka SAX510.

Typical Physical Properties

Manta Code:	MS3303H
Chemical Name:	Silane-terminated polyether
Appearance:	Transparent viscous liquid
Flash Point:	≥ 100 °C
Viscosity (25 °C):	50,000 – 60,000 mPa·s
Density (25 °C):	1.002 – 1.005 g/cm³
Tack-Free Time:	30 min
Tensile Strength:	≥ 1.95 MPa
Elongation at Break:	≥ 300 %
Hardness (Shore A):	≥ 38
pH Value:	6 – 9
Activity:	High
Modulus:	Medium
Chemical Structure:	

Properties

- Curing: fast tack-free time and through-cure for efficient production.
- Transparency and weathering: high transparency with good resistance to UV aging and yellowing.
- Mechanical properties: high bond strength combined with good tensile elasticity and recovery.
- Environmental profile: solvent-free, low odor and suitable for low-VOC formulations; can be formulated with tin-free catalysts.
- Stability: good resistance to water and chemical solvents and good storage stability.
- Blending: can be blended with other Manta polymers or compatible resins to adjust mechanical properties and formulation cost.

Applications

Manta MS3303H is used as a base polymer for moisture-curing sealants, adhesives, potting and encapsulation compounds and coatings. It cures at room temperature with atmospheric moisture, typically with amine- or tin-based catalysts, and can be formulated as 1K or 2K systems. Typical uses:

Transportation sealants;
Medium- to low-modulus construction sealants;
Clear potting and encapsulation adhesives;
Consumer and DIY sealants;
Low-emission interior decoration sealants.

Processing

1. Moisture sensitivity: the alkoxysilane end groups of MS3303H 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: MS3303H 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.
6. Catalysts: tin-free catalysts can be used for applications with stricter environmental requirements.

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.

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