MANTA

Technical Data Sheet

Version: 1.0

Manta MS3303T

Silyl-terminated polyether (STPE), SMP type

Description

Manta MS3303T is an alkoxysilane-terminated polyether (STPE, also known as silane-modified polymer, SMP) with a polyoxypropylene backbone. It is a base polymer for moisture-curing systems and forms an elastic network through hydrolysis and crosslinking of its alkoxysilane groups in ambient humidity.

Compared with conventional silicone and polyurethane technologies, MS3303T offers a balance of mechanical properties and safe handling. It is solvent-free (100 % solids), suitable for low-VOC formulations and contains no free isocyanates.

Typical Physical Properties

Manta Code:	MS3303T
Chemical Name:	Silane-terminated polyether
Appearance:	Transparent viscous liquid
Flash Point:	≥ 100 °C
Viscosity (25 °C):	40,000 – 50,000 mPa·s
Density (25 °C):	1.002 – 1.005 g/cm³
Activity:	High
Modulus:	Medium
Chemical Structure:	

Properties

- Fast curing: short cure profile for higher productivity.
- High transparency: clear appearance for transparent formulations.
- Weathering: good resistance to UV and yellowing.
- Adhesion and elasticity: good bond strength combined with good tensile elongation.
- Resistance: good resistance to moisture and many chemical solvents.
- Storage stability: long shelf life and stable viscosity during storage.
- Handling: solvent-free and low odor.
- Compatibility: can be blended with other polymers for formulation flexibility.

Applications

Manta MS3303T is a base polymer for adhesives, sealants, potting compounds and protective coatings. It cures with atmospheric moisture at room temperature in the presence of catalysts (e.g., amines or organotin compounds):

1. Clear sealants and adhesives: high transparency and yellowing resistance for glass assembly, decorative bonding and visible joints.
2. Industrial assembly bonding: production lines requiring fast curing and high initial green strength; one-component (1K) systems for ease of use and two-component (2K) systems for deep-section curing.

3. Electronic potting and encapsulation: can be evaluated for moisture and chemical protection of electronic components; electrical properties and long-term reliability must be verified.
4. Transportation: bonding and sealing of vehicle components requiring high elasticity and aging resistance.
5. Construction: elastic sealing of curtain walls, window perimeters and interior decoration with a paintable, solvent-free and low-odor finish.

Processing

1. Moisture: because the alkoxysilane groups cure with moisture, keep storage and production conditions dry to prevent premature crosslinking.
2. Fillers: the MS3303T content can be adjusted to the requirements. It is compatible with PCC (nano precipitated calcium carbonate), GCC (ground calcium carbonate), fumed silica, silica flour, diatomaceous earth and aluminum hydroxide.
3. Drying: dry all fillers thoroughly to avoid premature gelation. Vinyltrimethoxysilane (VTMO) is recommended as a moisture scavenger.
4. Plasticizers: suitable plasticizers include phthalates (e.g., DINP, DIDP), PPG and other low-molecular-weight polyethers.
5. Additives: adhesion promoters, antioxidants, fungicides and UV/light stabilizers can be added to adjust the end-use properties.

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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