MANTA

Technical Data Sheet

Version: 1.0

Manta MS305D

Silyl-terminated polyether (STPE), SMP type

Description

Manta MS305D is a silane-terminated polyether (STPE, also known as silane-modified polymer, SMP) with a polyoxypropylene backbone. In moisture-curing systems it hydrolyzes and crosslinks with ambient humidity to form a durable network with high hardness. It is used as a base polymer for elastic sealants, structural adhesives and protective coatings.

Compared with conventional silicone and polyurethane (PU) technologies, MS305D is solvent-free (100 % solids), suitable for low-VOC formulations and contains no free isocyanates, which avoids the isocyanate-related handling precautions of PU systems.

Typical Physical Properties

Manta Code:	MS305D
Chemical Name:	Silane-terminated polyether
Appearance:	Transparent viscous liquid
Flash Point:	≥ 100 °C
Viscosity (25 °C):	1,400 – 1,600 mPa·s
Density (25 °C):	1.002 – 1.005 g/cm³
Tack-Free Time:	30 min
Tensile Strength:	≥ 3.0 MPa
Elongation at Break:	≥ 60 %
Hardness (Shore A):	70
pH Value:	6 – 8
Activity:	High
Modulus:	High
Chemical Structure:	

Properties

- High activity, high modulus and high hardness
- Good resistance to aging and yellowing
- Good bond strength and tensile strength
- Good resistance to water and chemical solvents
- Good storage stability
- Solvent-free and low odor
- Can be blended with other polymers

Applications

Manta MS305D is a high-hardness binder for moisture-curing systems. It can be formulated as one-component (1K) or two-component (2K) products with good bond strength on many substrates.

1. Industrial adhesives and sealants: high-strength bonding and industrial joint sealing where high mechanical resistance is required.

2. Coatings and potting compounds: durable protective coatings; can be evaluated for electronic potting, with electrical properties to be verified in the final formulation.
3. Transportation: structural assembly in rail vehicles and specialty vehicles where high hardness is required; can be evaluated for EV battery assembly.
4. Construction: high-hardness bonding and sealing, e.g., window perimeters and facade cladding, with a paintable and non-staining finish.
5. New energy: can be evaluated for sealing and fixing of solar panels and wind-energy components.

Processing

1. Moisture: because the alkoxysilane groups are moisture-sensitive, keep storage and production conditions dry to prevent premature crosslinking.
2. Fillers: MS305D is compatible with PCC (nano precipitated calcium carbonate), GCC (ground calcium carbonate), fumed silica, silica flour, diatomaceous earth and aluminum hydroxide; the dosage can be adjusted to the requirements.
3. Drying: dry all fillers thoroughly to prevent 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.

Contact Information

Nanjing Manta New Material Co., Ltd
Add: Room 102-247, Building 17, No. 1 Qiliqiao North Road, Nanjing Area of the China (Jiangsu) Pilot Free Trade Zone, Nanjing, China
Factory: Miaoguan Town Industrial Park, Sishui County, Jining City, Shandong Province, China

Mob: +86 18961071292
Mail: inquiry@mantasil.com Web: www.mantasil.com