

Manta MS310A

Hybrid Polymer

Description

Manta MS310A is a silane-terminated polyether (STPE) polymer featuring a silane terminal group. This unique molecular structure leverages the high reactivity—where the proximity of the nitrogen atom to the silicon center significantly accelerates the hydrolysis of alkoxy groups upon exposure to ambient moisture.

Built on a high-purity Polypropylene Oxide (PPO) backbone, MS310A cures to form a stable, high-performance siloxane network. It is designed for formulators seeking a rapid-curing binder that eliminates the need for organotin catalysts, providing a safer and more sustainable solution for premium adhesives and sealants.

Typical Physical Properties

Manta code:	MS310A
Chemical Name:	Silane-terminated polyether High reactivity
Appearance:	Colorless transparent liquid
CAS NO.:	
Density (25°C)/g/cm ³ :	1.005-1.006
Viscosity (25°C) / mpa·s:	7000 – 10000
Chemical Structure:	



Activity:	High Activity
Modulus:	

Properties

- Superior Reactivity (Alpha-Effect): Enables rapid tack-free times and fast through-cure without heavy metal catalysis.
- Tin-Free & Eco-Friendly: Allows for the formulation of non-toxic, tin-free, and phthalate-free systems, meeting the highest environmental standards.
- Exceptional Optical Clarity: Perfectly suited for crystal-clear sealants and transparent bonding applications.
- Enhanced Weathering Resistance: Outstanding resistance to UV aging and yellowing, ensuring long-term aesthetic and structural integrity.
- Processing Efficiency: Low base viscosity ensures easy compounding with conventional fillers and auxiliaries.
- Wide Temperature Stability: The low glass transition temperature (T_g) ensures the cured

material remains flexible and mechanically stable across a broad temperature range.

Applications

1. High-Performance Sealants: Ideal for construction and industrial sealants where rapid curing and over-paintability are required.
2. Elastic Adhesives: Used as a primary binder for assembly adhesives in automotive, rail, and structural engineering.
3. Electronic Potting & Encapsulation: Provides excellent protection for sensitive electronic components due to its stable mechanical properties and moisture resistance.
4. Coatings & Additives: Acts as a reactive binder or functional additive in high-durability coatings to improve adhesion and cross-linking density.
5. DIY & Professional Bonding: Exceptional primerless adhesion to a wide variety of substrates, including metals, plastics, and ceramics.

Processing

1. Moisture Sensitivity: Manta MS310A is highly reactive to moisture. To ensure product stability and prevent premature gelation, it is critical to maintain a moisture-free environment throughout storage, handling, and production.
2. Filler Compatibility: This polymer offers high formulation flexibility and can be compounded with a wide range of fillers, including PCC (Precipitated Calcium Carbonate), GCC (Ground Calcium Carbonate), fumed silica, quartz flour, diatomaceous earth, and aluminum hydroxide.
3. Dehydration & Scavenging: > All fillers must be thoroughly dehydrated before incorporation. Vinyltrimethoxysilane (VTMO) is recommended as a highly efficient water scavenger to neutralize residual moisture in the system.
4. Plasticizer Selection: Manta MS310A is compatible with various plasticizers, such as phthalates (DINP, DIDP, DOTP) and low molecular weight polyethers (PPG). It also enables the development of phthalate-free or plasticizer-free formulations for high-end applications.
5. Functional Additives: To enhance specific performance characteristics, the addition of adhesion promoters, antioxidants, biocides (fungicides), and light stabilizers is recommended.

Packing

50kg plastic drum lined with aluminum foil bag; 200kg drum lined with aluminum foil bag;
1000kg IBC/Tote;
Can be customized.

Safety and Storage

Keep in a cool and dry place and avoid storage in direct sunlight. Shelf life is 12 months. It is non-hazardous substance.

Contact Information

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