

# Manta MS313

Hybrid Polymer

## Description

Manta MS313 is a silane-terminated polyether (STPE) polymer designed for the formulation of high-performance moisture-curing adhesives and sealants. Unlike conventional silylated polymers, this specific molecular architecture places the electron-donating nitrogen atom in close proximity to the silicon atom, significantly accelerating hydrolysis.

This intrinsic high reactivity allows for rapid curing profiles without the need for toxic organotin catalysts, offering a safer and more environmentally friendly alternative to traditional polyurethane or silicone systems. It cures upon exposure to ambient moisture to form a tough, elastic, and durable siloxane network.

## Typical Physical Properties

Manta code:	MS313
Chemical Name:	Silane terminated polyether;
Appearance:	Colorless transparent liquid
CAS NO.:	
Density (25°C)/g/cm <sup>3</sup> :	1.005-1.006
Viscosity (25°C) / mpa·s:	30000-42000
Chemical Structure:	



Activity:	High Activity
Modulus:	

## Properties

- **Novel Alpha-Silane Technology:** Exhibits extremely fast curing speeds and rapid tack-free times due to the alpha-effect.
- **Eco-friendly & Tin-Free:** Enables the formulation of tin-free and plasticizer-free adhesives, meeting stringent regulatory standards.
- **Superior Processability:** Low viscosity allows for easy compounding with high filler loadings without compromising flow properties.
- **Balanced Mechanics:** Delivers exceptional tensile strength and high elasticity, adjustable to a wide range of modulus requirements.
- **Excellent Stability:** Provides long shelf-life stability in properly sealed formulations.
- **Broad Adhesion:** Bonds well to a variety of substrates without primers.

## Applications

MS313 serves as a high-performance reactive binder for moisture-curing sealants, adhesives, potting compounds, and additives in coatings. It is specifically engineered for systems requiring rapid curing, high elastic recovery, and tin-free formulations.

### Key Application Fields:

1. **Industrial Adhesives:** Ideal for elastic bonding in structural engineering, automotive assembly, and transportation, where vibration resistance and durability are critical.
2. **Construction Sealants:** Perfect for formulating high-quality, overpaintable, and weather-resistant construction sealants (complies with low-VOC requirements).
3. **Electronics & Electrical:** Used as a potting or encapsulation compound to protect sensitive components, providing excellent insulation and stress relief.
4. **DIY & Assembly:** Excellent for "liquid nail" type assembly adhesives, offering high initial tack and fast strength build-up.

### Processing

1. **Moisture Sensitivity:** Manta MS313 is highly reactive to moisture. It is essential to maintain a moisture-free environment during both storage and production to prevent premature gelation.
2. **Filler Compatibility:** The polymer exhibits excellent compatibility with various fillers, such as PCC, GCC, fumed silica, and aluminum hydroxide, allowing for versatile formulation designs.
3. **Dehydration:** Fillers must be dried before use. We recommend using Vinyltrimethoxysilane (VTMO) as a water scavenger during the mixing process to ensure shelf-life stability.
4. **Plasticizer Selection:** Compatible with a variety of plasticizers including DINP, DIDP, and Polypropylene Glycol (PPG).
5. **Additives:** Performance can be further enhanced by incorporating adhesion promoters, antioxidants, UV stabilizers, and fungicides.

### 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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