MANTA

Technical Data Sheet

Version: 1.0

Manta MS330C

MS Polymer / Silyl-Terminated-Polyether

Description

Manta MS330C is a silane-terminated polyether (STPE) polymer featuring trimethoxysilylpropylcarbamate functional groups on a linear Polypropylene Oxide (PPO) backbone.

Specifically engineered for premium moisture-curing elastic systems, MS330C undergoes a controlled hydrolysis process to form a robust, high-density siloxane network. This solvent-free and isocyanate-free binder ensures an odorless curing process with zero bubble formation, making it an ideal "green" alternative for high-end construction and industrial applications. It combines exceptional adhesive strength with superior elastic recovery, maintaining structural integrity across diverse substrates.

Typical Physical Properties

Manta code:	MS330C
Chemical Name：	Trimethoxysilane Terminated Polyether; Polyether with gamma isocyanato trimethoxy silane;
CAS No.:	216597-12-5
Appearance	Colorless Transparent Liquid
Flash Point (℃):	237
Viscosity (25℃) / mpa·s:	20000-35000
Density (25℃) / g/cm3:	1.02 – 1.05
Catalyst Dosage (Tin, %)	1 - 2
Chemical Structure:	
Activity:	High Activity
Modulus:	Medium-high modulus

Properties

- Optimal Balance of Activity & Modulus: High reactivity ensures fast tack-free times while delivering medium-to-high modulus for structural support.
- Superior Elasticity & Recovery: Exhibits excellent mechanical strength combined with very high elastic recovery, ideal for joint movements.
- Environmentally Friendly: 100% solids, zero VOC, and isocyanate-free; no bubbles or odors are generated during the cross-linking process.
- Excellent Optical Properties: High transparency and outstanding resistance to yellowing,

suitable for clear sealants and coatings.

- Ease of Compounding: Low base viscosity allows for efficient mixing with standard fillers and auxiliaries, ensuring a smooth production process.
- Primerless Adhesion: Provides strong, durable bonds to a vast range of substrates, including porous and non-porous surfaces, without the need for pre-treatment.

Applications

1. Automotive & Transportation: High-performance elastic sealants for vehicle bodies, rail transport, and container construction where vibration resistance is essential.
2. Construction & Architecture: Medium-to-low modulus joint sealants for high-rise buildings and infrastructure, offering excellent weatherability.
3. Transparent Encapsulation: Precision potting compounds and crystal-clear adhesives for electronic components and decorative glass bonding.
4. Eco-Friendly Interior Design: Sustainable DIY and professional adhesives for interior decoration, ensuring healthy indoor air quality (Low VOC).
5. Industrial Sealing Coatings: Protective coatings requiring high flexibility, durability, and superior adhesion to metallic and plastic surfaces.

Processing

Manta MS330C is highly soluble in common organic solvents but virtually insoluble in water. Upon exposure to moisture, it undergoes slow hydrolysis—releasing methanol—to form a chemically inert siloxane network. While uncatalyzed MS330C exhibits temporary stability in air, it must be stored and processed under moisture-controlled conditions to prevent slow polycondensation.

Standard mixing and compounding equipment are suitable for formulating Manta MS330C. To ensure long-term shelf life, the addition of water scavengers is essential. Vinyltrimethoxysilane (VTMO) or Trimethoxysilylmethyl-methylcarbamate(Alpha-silane) are highly recommended to prevent premature gelation during production and storage.

Typical Performance of a Reference Sample

MS330C Inspection Items	Standard	Analysis Results
Appearance	Colorless transparent liquid	Colorless transparent liquid
Viscosity (25°C) / mpa·s	20000 – 30000	25790
PH	6-9	7.0
Tensile Strength, Mpa	⩾0.5	0.82
Elongnation at Break, %	⩾80	136
Hardness	⩾30	32

Reference Formulation:

Component	Parts by Weight	Example / Function
Manta MS330C	30 - 40	MS Polymer
Plasticizer	10 - 20	PPG, DINP, or DOTP
Water Scavenger	1 - 2	Vinyltrimethoxysilane (VTMO)
Thixotropic Agent	2 - 5	Fumed Silica (Hydrophilic or Hydrophobic)
Fillers	40 - 50	Ground Calcium Carbonate (GCC) / TiO_2
Antioxidants and UV-stabilizers	0.1 - 2	Hindered Phenols (AO) / HALS (UV)
Adhesion Promoter	1 - 2	Amino-silanes (e.g., AMEO, AMMO)
Catalyst	0.3 - 0.6	Organotin (DBTDL) or Tin-free alternatives

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 24 months. It is non-hazardous substance.

Contact Information

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