MANTA

Technical Data Sheet

Version: 1.0

Manta 931

Methyltrimethoxysilane (MTMS) / Fundamental Crosslinker & Modifier

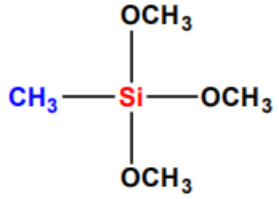
Description

Manta 931 is a fundamental alkyl-alkoxy organosilane. Featuring a non-polar methyl group and three highly reactive methoxy groups, it serves as the primary crosslinking agent for neutral-cure Room Temperature Vulcanizing (RTV) silicone sealants.

Beyond sealants, it is a monomeric building block for the synthesis of advanced silicone resins and acts as a highly effective hydrophobic (water-repellent) surface modifier for inorganic fillers and various substrates.

Performance equivalent to Momentive Silquest A-1630, Dow Z-6070, Evonik Dynasylan MTMS, WACKER M1-Trimethoxy, and Shin-Etsu KBM-13.

Typical Physical Properties

Product No.	931
Chemical Name	Methyltrimethoxysilane
CAS NO.	1185-55-3
EINECS NO.	214-685-0
Formula	C4H12O3Si
Appearance	Colorless Transparent Liquid
Density (ρ20°C, g/cm³)	0.9500±0.0050
Refractive Index (n25/D)	1.3695±0.0050
Purity (by GC, %)	99 min; 99.5 min (Electronic Grade)
Molecular Structure	

Features

- Reliable Crosslinking: The three methoxy groups hydrolyze to form highly reactive silanols, driving the condensation-cure mechanism in silicone rubber and producing dense 3D siloxane networks.
- High Hydrophobicity: The tightly bound methyl group imparts exceptional water-repellency to treated substrates and mineral fillers without altering their appearance.
- High Purity (Electronic Grade): The ≥ 99.5% electronic-grade variant ensures ultra-low ionic impurities, making it ideal for the encapsulation and potting of sensitive electronic and photovoltaic components.
- Solvent Miscibility: Highly miscible with standard organic solvents, including alcohols, aliphatic hydrocarbons, and ketones.

Applications

Manta 931 is a key raw material utilized across mass-market and high-tech industries:

1. RTV Silicone Sealants & Adhesives:

The most critical crosslinking agent for neutral-cure (alkoxy-type) room temperature vulcanizing silicone sealants, providing excellent shelf life and consistent curing profiles.

2. Inorganic Filler & Pigment Modification:

Used extensively to surface-treat mineral fillers (e.g., silica, talc, mica, ATH) and pigments. It renders these powders highly hydrophobic, significantly improving their dispersion and compatibility

within organic polymer matrices.
3. Silicone Resin Synthesis:
Acts as a fundamental monomeric building block in the polymerization and manufacturing of advanced organic silicone resins.
4. Water Repellents & Substrate Protection:
Applied directly or in solution to render porous materials—such as masonry, glass, and cardboard—highly water-repellent.
5. Fiberglass & Composites:
Utilized as a sizing and binder additive for glass fiber-reinforced plastic (FRP) laminates, enhancing the interfacial bond between the glass fibers and the polymer matrix.
6. 6. Aerogel Synthesis: Serves as a fundamental core monomer in the sol-gel synthesis of highly hydrophobic silica aerogels, used in lightweight, high-performance thermal insulation materials.

Formulation & Handling Guidelines

Hydrolysis Behavior: Manta 931 is practically insoluble in neutral water and reacts very slowly. To achieve rapid hydrolysis and the formation of active silanols, the addition of a hydrolytic catalyst (such as inorganic/organic acids, ammonia, amines, or organotitanates/tin) is strictly required.
Pre-treating the substrate with trace moisture and a catalyst may be necessary for optimal surface modification.

Packaging

In 20kg pail, 180kg drum and 900kg IBC

Safety and Storage

Keep away from heat and open flame. When stored at or below 25 °C in the original unopened containers, this product has a usable life of 24 months from the date of production.

Contact Information

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