

Manta S310

Isocyanate Functional Alkoxy Silane

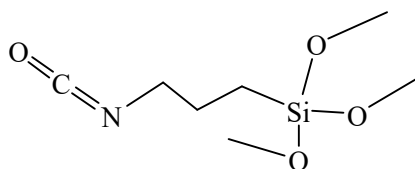
Description

Manta S310 is a bifunctional organosilane possessing a highly active isocyanate group and a hydrolyzable trimethoxysilyl group. The isocyanate functionality exhibits the typical high reactivity of an alkyl isocyanate, reacting rapidly with most active hydrogen-containing compounds (such as hydroxyl, amino, and mercapto groups). The silane portion can then crosslink with each other upon moisture exposure or bond chemically to a wide variety of inorganic substrates.

It is the chemical equivalent to industry standards such as Momentive Silquest A-Link™ 35, WACKER GENIOSIL GF 40, and Shin-Etsu KBM-9007.

Typical Physical Properties

Manta Code:	S310
Chemical Name:	γ -Isocyanatopropyltrimethoxysilane
Synonyms	Trimethoxy(3-isocyanatopropyl)silane; 3-(Trimethoxysilyl)propyl isocyanate;
CAS No. :	15396-00-6
EINECS No. :	239-415-9
Molecular weight:	205.28
Appearance:	Colorless transparent liquid
Purity (by GC, %)	96.0 min
Specific Gravity ($\rho_{20^{\circ}\text{C}}$, g/cm ³)	1.020~1.080
Refractive Index ($n_{25/D}$):	1.4190~1.4220
Boiling Point:	
Flash point:	99 °C closed cup
Chemical Structure:	



Properties

- Bifunctional Crosslinking: Highly reactive with -OH, -NH₂, and -SH functional polymers, providing a highly efficient moisture-cure silane crosslinking mechanism.
- Rapid Cure Kinetics: The trimethoxy groups offer exceptionally fast hydrolysis and crosslinking in the presence of atmospheric moisture.
- Exceptional Adhesion: Acts as a premium adhesion promoter, providing superior wet and dry adhesion to difficult substrates including glass, metals, and inorganic minerals.

- **Durable Bonds:** The resulting siloxane bonds offer excellent thermal, chemical, and UV stability.

Applications

Manta S310 is widely utilized as an essential crosslinker, end-capper, and adhesion promoter across advanced polymer systems:

1. **Polymer Modification (MS Polymer / SPUR):** Functions as the critical end-capping agent for diols or polyol polymers to manufacture Silane-Modified Polymers (SMP) and SPUR (Silane Terminated Polyurethanes). This enables the creation of high-performance, one-part moisture-curable urethane adhesives, sealants, and coatings without the presence of free unreacted isocyanates.
2. **Adhesion Promoter:** Extensively used in silicone sealants, polyurethane paints, and hybrid adhesives requiring aggressively enhanced adhesion to organic plastics (like nylon) or inorganic substrates where active hydrogen species are present.
3. **Resin Crosslinking:** Serves as a highly efficient modifier for hydroxyl-bearing resins (such as Acrylic resins, PVA) and alkoxy-silyl crosslinked fluoro-resin fluids, dramatically improving their chemical resistance and weatherability.
4. **Reactive Additive:** Enhances the performance of one-part moisture-curable and two-part reactive polyurethane systems.
5. **Automotive Glass Primers (AGR):** A crucial component in the formulation of fast-curing polyurethane primers for Automotive Glass Replacement (AGR) and direct glazing, providing instantaneous and uncompromising adhesion to glass substrates.

Packaging

In 20KG, 25kg iron pail, 200KG drum

Safety and Storage

- **Moisture Sensitivity Warning (CRITICAL):** This product is an isocyanate derivative and is extremely sensitive to moisture. Contact with water or ambient humidity will cause rapid hydrolysis, polymerization, and the generation of carbon dioxide (CO₂) gas, which can pressurize and rupture closed containers.
- **Storage:** Must be stored in a cool, strictly dry, and well-ventilated area away from direct sunlight. After opening, containers must be purged with a dry inert gas (Nitrogen or Argon) and resealed instantly.
- **Shelf Life:** Minimum 12 months in original, unopened containers under proper storage conditions.
- **Transportation:** Classified and shipped as a hazardous substance. Consult the Material Safety Data Sheet (MSDS) for comprehensive handling instructions.

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: 0086 18962800162

Mail: inquiry@mantasil.com Web: www.mantasil.com