MANTA

Technical Data Sheet

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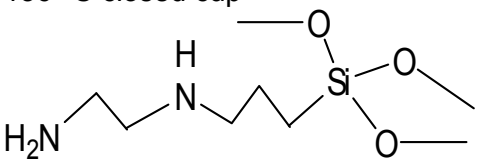
Manta A112

Diamino-Functional Silane Adhesion Promoter

Description

Manta A112 is a bifunctional organosilane possessing two reactive amino groups (primary and secondary) and one hydrolyzable trimethoxysilyl group.
Thanks to the specific reactivity of its 2-aminoethylaminopropyl structure, Manta A112 acts as a superior adhesion promoter and coupling agent. It delivers significantly higher bond strength to difficult inorganic and organic substrates compared to standard mono-amino silanes. It reduces filler sedimentation tendencies, improves dispersibility, and significantly enhances the mechanical and electrical properties of advanced composites and sealants.
Performance equivalent to Momentive Silquest A-1120 / A-1122, Dow Z-6020 (OFS-6020), Evonik Dynasylan DAMO, WACKER GENIOSIL GF 9, and Shin-Etsu KBM-603.

Typical Physical Properties

Manta Code:	A112
Chemical Name:	N-β-(aminoethyl)-γ-Aminopropyltrimethoxysilane
Synonyms:	[3-(2-Aminoethyl)aminopropyl]trimethoxysilane
CAS No. :	1760-24-3
EINECS No. :	217-164-6
Molecular Formula:	$C_8H_{22}N_2O_3Si$
Molecular Weight:	222.36
Appearance:	Colorless transparent liquid
Purity (by GC, %):	98%
Density (ρ20°C, g/cm³):	1.010-1.030
Refractive Index (n25/D):	1.4430±0.0050
Boiling Point:	261°C
Flash Point:	136 °C closed cup
Chemical Structure:	

Features

- Dual-Amine Reactivity: The combination of primary and secondary amines provides highly robust crosslinking with a wide variety of organic resins (epoxies, polyurethanes, phenolics, and acrylics).
- Trimethoxy Crosslinking: The highly reactive trimethoxysilyl group ensures rapid hydrolysis and the formation of a dense, durable 3D siloxane network on inorganic surfaces.
- Superior Wet Adhesion: Markedly improves the resistance of the cured polymer to moisture, vapor, and corrosion.
- Primerless Adhesion: Often eliminates the need for separate surface primers, saving processing time and costs.

Applications

Manta A112 is a critical high-performance additive utilized across diverse industries:

1. RTV Silicones & Hybrid Silane-Crosslinked Sealants

Addition to one- and two-part silicone-crosslinked sealants improves adhesion to a variety of substrates, including glass, steel, aluminum, and concrete. This silane significantly enhances adhesion to a wide array of plastics when used in combination with silylated polyurethane (SPUR)

technology.

2. Polysulfide Sealants

When added to one- and two-part polysulfide sealants, Manta A112 provides superior adhesion to glass, aluminum, and steel. Typically used at a loading of 0.5 to 1.0 wt%, it produces cohesive failure in the sealant rather than adhesive failure at the interface. It often eliminates the need for primers normally required for difficult surfaces.

3. Plastisol Sealants

Using Manta A112 (0.5 to 1.5 wt%) as a replacement for polyaminoamide adhesion promoters in plastisol sealants improves bonding to metal substrates. The modified system maintains a very light color and ensures a bubble-free cured compound with an improved overall appearance.

4. High-Performance Paints & Coatings

Functions as an internal adhesion promoter and crosslinker in 2K epoxy and 2K polyurethane heavy-duty protective coatings. It ensures exceptional inter-coat adhesion and boosts the anti-corrosion, salt-spray, and chemical resistance of films on metal substrates.

5. Glass Fiber & Mineral Wool Insulation

Used as a sizing and finishing agent for fiberglass and mineral wool. It significantly improves mechanical strength (flexural and tensile) and protects the interface from moisture degradation, maintaining high performance even in humid environments.

6. Foundry & Abrasives

In the foundry industry, it acts as a key additive to phenolic, furan, and melamine resin binders, increasing sand core strength and durability. In resin-bonded abrasives (such as grinding wheels), it enhances the bond between the abrasive grains and the resin matrix.

7. Phenolic & Epoxy Molding Compounds

As an additive in phenolic and epoxy molding compounds, Manta A112 reduces water absorption of molded composites. This leads to significantly improved wet electrical properties (volume resistivity and dielectric constant) and maintains structural integrity at elevated temperatures.

Packaging

In 25kg pail, 200kg drum and 1000kg 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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