MANTA

Technical Data Sheet

Version: 1.0

Manta A111

Primary Amino-Functional Silane Adhesion Promoter

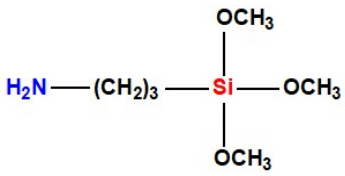
Description

Manta A111 is a primary amino-functional silane containing three hydrolyzable methoxy groups. As a fundamental adhesion promoter and coupling agent, the primary amine group (-NH2) reacts rapidly with a wide array of organic polymers, while the methoxysilyl groups provide robust crosslinking and covalent bonding to inorganic substrates.

It is an indispensable compounding ingredient designed to dramatically enhance the adhesion of sealants, adhesives, and coatings to difficult-to-bond surfaces.

It is the exact chemical equivalent to industry standards such as Momentive Silquest A-1110, Evonik Dynasylan AMMO, and Shin-Etsu KBM-903.

Typical Physical Properties

Product No.	Manta A111
Chemical Name	3-Aminopropyltrimethoxysilane
CAS NO.	13822-56-5
EINECS No.:	237-511-5
Formula	C6H17NO3Si
Appearance	Colorless transparent liquid
Density(ρ20°C, g/cm³）	1.0160 ± 0.0050
Refractive Index(n 25°C)	1.4230 ± 0.0050
Purity (by GC,%)	97min; 98 min
Chemical Structure	

Applications

Manta A111 is widely utilized as a foundational adhesion promoter across various polymer matrices:

1. RTV Silicones & Hybrid Systems: Acts as a superior internal adhesion promoter in Room Temperature Vulcanizing (RTV) silicones, MS Polymers, and SPUR hybrid sealants.
2. Difficult Substrates: Delivers exceptional bonding strength to notoriously challenging plastics and polymers, including ABS, PVC, and Polystyrene, as well as glass and metals.
3. Primer Systems: Serves as a highly effective active component in the formulation of surface primers for polyurethane and hybrid sealant applications.
4. Resin Modification: Used to modify phenolic, melamine, and epoxy resins to improve moisture

resistance and mechanical strength in composites.

Formulation & Handling Guidelines

- High Reactivity (CRITICAL): Because Manta A111 contains a highly reactive primary amine group, it reacts violently and instantly with isocyanates (-NCO) and epoxies. Do not add A111 directly into unreacted polyurethane prepolymers (one-part PU systems), as it will cause instant gelling. For one-part PU systems, secondary amines (like Manta A431) or latent silanes are required. A111 is best used in two-part systems or as a separate surface primer.
- Hydrolysis: Hydrolyzes rapidly in the presence of atmospheric moisture, releasing methanol. The resulting silanols will condense to form crosslinked siloxane networks.

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, Shelf life is 24 months. It's shipped as hazardous material.

Contact Information

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