MANTA

Technical Data Sheet

Version: 1.0

Manta L1831

Long-Chain Alkyl Functional Silane (C18)

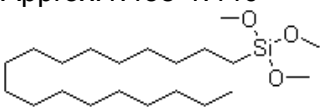
Description

Manta L1831 is a monomeric long-chain alkylfunctional silane, chemically identified as n-octadecyltrimethoxysilane. Featuring a very long 18-carbon (C18) linear aliphatic chain, this product delivers very high hydrophobicity and extreme lipophilicity (affinity for non-polar environments).

The highly non-polar nature of its massive octadecyl group significantly reduces surface energy, making Manta L1831 an effective surface modifier for inorganic substrates, minerals, and pigments. Upon exposure to moisture, its reactive methoxy groups undergo rapid hydrolysis to form durable, covalent siloxane bonds with the substrate. Concurrently, the long C18 chain extends outward to create a dense, highly water-repellent protective layer.

Due to its high molecular weight, Manta L1831 exhibits virtually no volatility and outstanding thermal stability. It is particularly suited to applications demanding superhydrophobic surfaces, heavy-duty mineral filler treatments for polyolefins, and the highly specialized surface modification of submicron or nano-particles.

Typical Physical Properties

Manta Code:	L1831
Chemical Name:	Octadecyltrimethoxysilane
Synonyms:	Trimethoxyoctadecylsilane
CAS No. :	3069-42-9
EINECS No. :	221-339-2
Appearance:	Colorless clear liquid (May appear as a white waxy solid at temperatures below 17°C)
Purity (by GC, %):	92.0 min
Density (ρ20°C, g/cm³):	Approx.0.883
Refractive Index (nD 25°C):	Approx.1.438-1.440
Chemical Structure:	

Applications

1. Mineral Filler Treatment (Plastics & Rubber): A highly effective surface modifier for inorganic fillers (like ATH, MDH, and silica) in polyolefins. It reduces melt viscosity, significantly improves processability, and maintains mechanical strength for highly loaded polymer compounds.
2. Superhydrophobic Coatings: Ideal for formulating superhydrophobic (lotus effect) and self-cleaning coatings. It provides extreme, long-lasting water repellency for concrete, glass, and ceramics by significantly lowering the substrate's surface energy.
3. Pigment Dispersion: Prevents the agglomeration of ultrafine pigments (e.g., TiO2) and nanoparticles, ensuring rapid wetting, excellent dispersion, and higher color strength in masterbatches and industrial coatings.
4. Mold Release: Acts as a highly thermally stable, semi-permanent release agent in rigorous plastic and rubber molding processes, owing to its exceptional non-polar properties and high thermal resistance.

Packaging

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

Safety and Storage

Phase Change (Melting/Freezing): Manta L1831 has a melting point of approximately 16–17°C. If solidified during winter transport or storage, gently warm the container in a warm water bath or temperature-controlled room until fully liquefied. Do not use an open flame.

Hydrolysis Reaction & Methanol Release: Manta L1831 reacts with moisture to form cross-linked polysiloxanes. CRITICAL WARNING: This hydrolysis reaction releases METHANOL as a toxic and highly flammable byproduct. Ensure excellent local exhaust ventilation during formulation and application to prevent vapor accumulation.

Storage Conditions: Store in a cool, dry, and well-ventilated area away from direct sunlight and moisture. Keep containers hermetically sealed.

Shelf Life & Transport: 12 months shelf life. Classified as a non-hazardous substance for transport.

Contact Information

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