MANTA

Technical Data Sheet

Version: 1.0

Manta MSES

Sodium Methyl Siliconate (Aqueous Solution)

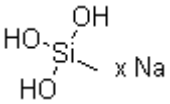
Description

Manta MSES is a water-reducible sodium methyl siliconate concentrate formulated to deliver enduring hydrophobicity and moisture defense across a wide array of porous mineral surfaces. By chemically reacting with ambient carbon dioxide and inherent surface hydroxyls, the active siliconate constructs a resilient, insoluble siloxane matrix deep within the substrate's capillary pathways. This advanced mechanism significantly reduces capillary water uptake while fully retaining the material's natural breathability (vapor permeability).

Supplied as a highly alkaline aqueous formulation, Manta MSES is highly cost-effective. It can be easily diluted with water for the mass-scale integral water-repellent treatment of building materials, heavy civil engineering structures, and oilfield applications.

Performance equivalent to Dow XIAMETER™ OFS-0772 Siliconate.

Typical Physical Properties

Manta Code:	MSES
Chemical Name:	Sodium methyl siliconate
Synonyms:	Methylsilanetriol sodium salt
CAS No.:	16589-43-8
EINECS No. :	240-648-3
Molecular Formula:	CH3Na3O3Si
Appearance:	Colorless or light yellow transparent liquid
Solid Content:	30% ± 2%
Viscosity (25°C, mm²/s):	8-15
Specific Gravity (25 °C):	1.10 - 1.30
pH Value:	≥13
Silsesquioxane Content% (m/m):	≥12
Alkali Content% (m/m):	5-10
Flammability:	Non-flammable
Chemical Structure:	

Waterproof mechanism:

Manta MSES is a reactive penetrating waterproofing agent. Upon application, the active siliconate reacts with water and atmospheric carbon dioxide (CO2) to form methylsilicic acid. This intermediate rapidly undergoes condensation polymerization, chemically bonding with the hydroxyl groups of the building material. This process generates an insoluble, highly cross-linked polymethylsiloxane resin film deep within the structural capillaries.

Features

Eco-Friendly Base: A water-based, zero-VOC formulation that complies with modern environmental air-quality regulations (Note: Liquid is highly alkaline).

Exceptional Impermeability: Significantly reduces capillary water absorption, delivering impermeability up to four times that of untreated concrete.

Cost-Effective Scalability: Offers a highly economical cost-to-performance ratio, making it suitable for large-scale industrial and civil projects.

Rebar Passivation: Exerts a strong alkaline passivating effect within the concrete matrix, actively protecting internal reinforcing steel (rebars) from corrosion.

Applications

1. Industrial Dip-Treatment & Construction Materials (Core Application)
A cost-efficient waterproofing solution for the factory-line mass production of fired clay bricks and roofing tiles. Widely utilized for integral mixing or dip-treatment of high-absorbent inorganic blocks, including autoclaved aerated concrete (AAC), gypsum, and perlite boards.
2. Heavy Civil Engineering & Water Containment
Used for the anti-penetration protection of massive reinforced concrete structures. Extensively applied in underground infrastructure, tunnels, dams, and sewage treatment tanks to significantly reduce water erosion and freeze-thaw degradation.
3. Oil & Gas Drilling Fluids & EOR
Acts as a critical shale inhibitor and fluid loss additive in oilfield operations. It adjusts the viscosity of drilling muds, stabilizing shale and preventing wellbore collapse. Utilized in Enhanced Oil Recovery (EOR) to maintain the integrity of the reservoir rock skeleton.
4. Architectural Surface Waterproofing
Serves as a breathable sealer for exterior walls and basements. (Note: Due to its sodium base, over-application on dark or highly decorative surfaces may result in a white carbonate residue. For decorative stone/brick, Manta MSEP Potassium Siliconate is recommended).

Packaging

In 50kg, 250kg drum, 1350kg IBC

Safety and Storage

Store in a cool, dry place and avoid direct sunlight. Keep containers tightly closed, as the product reacts with atmospheric carbon dioxide. Shelf life is 12 months from the date of production when stored at or below 35°C in the original unopened containers. The liquid is highly alkaline; avoid contact with skin and eyes and read the Safety Data Sheet before handling.

Contact Information

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