

Manta WS112

Reactive Polymethylhydrogensiloxane (PMHS) Emulsion

Description

Manta WS112 is a high-performance water-borne emulsion based on reactive Polymethylhydrogensiloxane (PMHS). Designed exclusively for heavy-duty architectural waterproofing, it serves as a highly efficient impregnating agent and mass water repellent.

Reaction Mechanism: Featuring highly reactive silicon-hydride (Si-H) bonds within its molecular backbone, the emulsion readily undergoes a dehydrocondensation cross-linking reaction when exposed to the moisture and alkalinity of mineral substrates. This process inherently releases trace amounts of hydrogen gas, initiating a controlled "micro-expansion" that actively densifies the internal capillary matrix while forming a superior, long-lasting hydrophobic polysiloxane network.

Key Features & Reaction Mechanism

- **Advanced PMHS Chemistry:** Penetrating crystallization film-forming properties that ensure deep and robust moisture protection.
- **Active Structural Densification:** The unique micro-expansion capability densifies the internal matrix, significantly enhancing the structural impermeability of the treated material.
- **Superior Hydrophobic Barrier:** Eliminates moisture ingress by transforming into an exceptional water-repellent film (lotus effect).

Typical Physical Properties

Manta code:	WS112
Chemical Name:	Poly-methyl hydrogen siloxane
Appearance:	Milky white aqueous liquid
Total solid content:	Approx. 30%
pH:	6-8
Density(g/cm ³):	1.00-1.20
Flammable:	Non-flammable

Applications

Manta WS112 is highly adaptable for comprehensive architectural and civil engineering protection:

1. **General Construction & Rebar Protection:** Waterproofing and moisture-proofing for roofs, natural stone, interior/exterior walls, floors, bathrooms, kitchens, basements, and warehouses. Provides robust rust prevention and anti-seepage for reinforced concrete structures.
2. **Underground & Civil Defense:** Mitigates water erosion and weathering in culverts, bridges, dams, tunnels, hydropower stations, and water diversion projects.
3. **Water-Retaining Facilities:** Secures the impermeability of swimming pools, water purification tanks, sewage tanks, and water towers.

4. High-Absorbent Inorganic Aggregates: Impregnation treatment for perlite boards, roofing tiles, cement bricks, lightweight claddings, asbestos, inorganic fabrics, and thermal insulation materials.
5. Architectural Coatings Additive: Enhances water resistance, protects colors, prevents pollution, and delays aging in water-soluble architectural finishes (widely used in exterior facades).
6. Other Special Uses: Applicable for any specialized requirements demanding reduced water absorption and anti-seepage properties.

How to use

1. In-Can Addition for Water-Borne Coatings

- Calculate the addition rate based strictly on the water content of the existing waterproof coating formulation.
- The recommended dosage is 1/15 relative to the water phase.
- CRITICAL EHS WARNING: Due to the highly reactive Si-H bonds, this must be applied strictly as a post-addition (on-site mix). Do not incorporate into alkaline or water-based coatings for long-term closed storage, as continuous hydrogen gas evolution will cause severe container swelling.

2. Surface Impregnation (Spray Application)

- Dilute the WS112 emulsion with clean, potable water at a standard ratio of 1:10 to 1:20.
- Apply via a low-pressure sprayer onto absorbent mineral substrates until saturated.
- Peak hydrophobic performance is typically achieved after 48 hours under ambient conditions.

Packaging

In 50kg, 60kg, 200kg drum, or customized.

Safety and Storage

Keep in a clean, cool, and dry place. Protect from rain and direct sunlight. Store strictly between 0°C and 50°C (Protect from freezing). Shelf life is 12 months in original unopened vented containers. It is non-hazardous substance.

Contact Information

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