

Manta WS111

Reactive Siloxane Emulsion (Architectural & Textile DWR)

Description

Manta WS111 is a water-borne reactive siloxane emulsion engineered for the durable hydrophobic impregnation of porous mineral substrates and advanced textile finishing.

Unlike highly alkaline siliconates, this neutral emulsion cures through a completely different mechanism. Upon penetration, the active siloxane molecules react with natural hydroxyl groups (in masonry) or fiber molecules (in textiles). This dehydrocondensation process forms a highly stable, insoluble, three-dimensional polysiloxane network, delivering exceptional water repellency while maintaining complete breathability.

Features

- **Deep Penetrating Power:** Highly penetrative formulation that reaches deep into the substrate, delivering exceptional water and moisture repellency.
- **100% Breathable & Invisible:** Forms no surface membrane. Fully preserves the substrate's natural appearance and crucial water vapor permeability.
- **Comprehensive Protection:** Dramatically reduces capillary water absorption, providing enduring protection against efflorescence, rust (rebar corrosion), and environmental staining.
- **Dual-Industry Versatility:** A unique molecular structure designed to excel in both architectural mass-waterproofing and high-performance textile DWR (Durable Water Repellent) finishing.

Typical Physical Properties

Manta code:	WS111
Chemical Name:	Poly-methyl hydrogen hydroxy siloxane
Appearance:	Milky water-based liquid
Total solid content:	30%-50%
pH:	6-8
Density(g/cm ³):	1.00-1.20
Flammable:	Non-flammable

Applications

1. Architectural & Civil Engineering Protection

Infrastructure & Masonry: Robust moisture mitigation for concrete, brickwork, tunnels, dams, and subterranean structures.

Water-Retaining Facilities: Enhances impermeability in pools, water purification tanks, and wastewater containment systems.

Coating Additive: When incorporated into water-borne latex paints, it drastically reduces capillary water absorption while maintaining stable substrate bond strength.

2. Advanced Textile Finishing (DWR)

Serves as a highly effective, wash-resistant Durable Water Repellent (DWR) agent for various natural and synthetic fabrics (cotton, linen, silk, and blends).

The reactive siloxane molecules penetrate the fibers and cross-link under heat curing, forming a permanent hydrophobic finish.

How to use

1. Architectural Surface Spraying

Dilute the WS111 emulsion with clean water at a ratio of 1:10 to 1:20.

Apply evenly via a low-pressure sprayer onto highly absorbent inorganic substrates. Optimal hydrophobic performance develops after 48 hours of natural curing.

2. In-Can Addition for Water-Borne Paints

The recommended addition rate is generally 1/15 relative to the total water content of the existing coating. Mix mechanically until fully homogeneous. (Note: Add on-site; avoid long-term closed storage).

3. Textile DWR Finishing

Fully compatible with standard textile padding (pad-dry-cure) or exhaustion methods.

Recommended Dosage: 10 to 15 g/L in the finishing bath, depending on fabric weight and desired hydrophobicity.

Precautions

Thermal Limits: For architectural use, apply between 0°C and 50°C. Protect from freezing. For textile applications, the emulsion must undergo high-temperature cross-linking (curing) at up to 150°C to achieve a permanent bond with the fibers.

Occupational Safety: Formulated as a sustainable, non-toxic green chemical. Wear protective gloves. In case of ocular exposure, immediately flush eyes with copious amounts of water and consult a physician.

Packaging

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

Safety and Storage

Keep in a cool and dry place and avoid storage in direct sunlight. Store in a cool, dry place. Maintain storage temperatures between 0°C and 50°C. Shelf life is 12 months in original unopened containers. It is non-hazardous substance.

Contact Information

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