MANTA

Technical Data Sheet

Version: 1.0

Manta WS115

Concentrated Siliconate Water Repellent

Description

Manta WS115 is a highly concentrated, water-reducible solution of alkali metal methyl siliconate. Designed specifically for the hydrophobic treatment of natural stone and porous masonry, it must be diluted prior to application. Mechanism: Once absorbed by the substrate, the active siliconate reacts naturally with atmospheric carbon dioxide and internal moisture. This chemical reaction yields an insoluble, invisible polymethylsilsesquioxane network deeply embedded within the capillary pores. It effectively repels liquid water while maintaining water vapor permeability.

Features

- Invisible Protection: Penetrating treatment that maintains the natural appearance of the substrate.
- Superior Hydrophobicity: Significantly reduces capillary water uptake, delivering exceptional water, moisture, and seepage resistance.
- Extreme Weatherability: Demonstrates outstanding thermal stability (resisting temperature fluctuations from -50°C to 150°C) and provides robust UV and anti-aging protection.
- Damage Mitigation: Actively prevents structural spalling and flaking caused by severe freeze-thaw cycles and weathering, significantly increasing substrate longevity.
- Cost-Effective Efficiency: Highly concentrated formulation allows for high dilution rates, ensuring economical application with long-lasting, wash-resistant durability.

Typical Physical Properties

Manta Code:	WS115
Chemical Name:	Aqueous Alkali Metal Methyl Siliconate
Appearance:	Colorless transparent liquid
Total Solid Content:	30%
Active Substance Content:	20%
pH:	13
Specific Gravity (25°C):	1.1
Flammable:	Non-flammable

Applications

Manta WS115 is predominantly specified for the hydrophobic surface treatment of porous mineral building materials:

1. Substrate Impregnation: Highly effective on natural stone, brickwork, unglazed ceramics, fair-faced concrete, cementitious mortars, perlite, and gypsum boards. (Note: When applying to wood, preliminary testing is strictly required as high alkalinity may cause severe discoloration).
2. Formulation Additive: Functions as an excellent performance-enhancing additive for sodium silicate (water glass) systems.

How to use

1. Substrate Preparation

The surface must be structurally sound, clean, and free of dirt and contaminants. Cracks should be filled level with putty or cement slurry; the substrate must be flat and solid, free from hollow or loose areas.

2. Pre-Dampening & Dilution

Pre-Wetting: Slightly dampening the mineral substrate prior to application can significantly optimize capillary absorption.
Dilution: Dilute the WS115 concentrate with clean water to an active concentration of ≤ 3%. Warning: Concentrations exceeding 3% significantly increase the risk of severe white crystalline bloom (efflorescence) on the treated surface.

3. Application Method
Apply the diluted solution via low-pressure sprayer, brush, sponge, or roller. It can also be utilized in dipping/soaking processes or as an integral admixture in concrete.
Wet-on-Wet Application: For maximum penetration, apply a second coat while the first coat is still visibly wet.
Surface Wiping (Important): When treating dense surfaces such as polished stone or ceramic tiles, any unabsorbed excess liquid must be wiped off immediately with a clean, soft cloth before it dries to prevent permanent alkaline white spots. Allow the treated surface to dry naturally and protect from water for a minimum of 24 hours.

Precautions

1. Highly Caustic (pH 13): This product is strongly alkaline and slightly corrosive. It will aggressively etch and permanently damage glass, plastics, and sensitive plant life. It reacts with metals (e.g., aluminum). Mask and protect adjacent windows, metal fixtures, and vegetation prior to application.
2. Over-Application Remediation: If applied excessively, an insoluble white alkaline precipitate will form upon drying. If this cannot be removed by immediate water flushing, aggressive scraping or mechanical abrasion will be required.
3. Occupational Health & PPE: Wear chemical-resistant gloves, face shields, and protective clothing at all times. If spraying in enclosed areas, local exhaust ventilation is mandatory to avoid inhaling aerosols. Keep strictly out of reach of children.
4. First Aid: Strictly avoid direct skin contact. In case of accidental exposure, flush immediately with copious amounts of water. For ocular contact, flush continuously for 15 minutes and seek immediate medical attention. (Note: Once the treated surface has dried, its alkalinity disappears and it is harmless to the human body.)
5. Winter Reconstitution: At very low temperatures, the active ingredients may crystallize. Simply heat/allow the product to warm to room temperature; it will fully reconstitute into a clear solution without any loss of active performance.

Packaging

In 50kg, 60kg, 250kg drum, or customized.

Safety and Storage

Keep in a clean, dry place. Store strictly at or below 25°C (≤ 77°F) in original sealed containers. Shelf life is 12 months.

Contact Information

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