MANTA

Technical Data Sheet

Version: 1.0

Manta WS450

Silicone Resin Emulsion for Architectural Coatings

Description

Manta WS450 is a solvent-free aqueous emulsion of a modified polysiloxane resin. It is specifically designed to function as the primary binder or co-binder in the formulation of exterior architectural coatings and silicone resin plasters.
Equivalent to Wacker SILRES® BS 45.

Typical Physical Properties

Manta Code:	WS450
Chemical Name:	Aqueous emulsion of modified polysiloxane resin
Appearance:	Milky white liquid
Active Content(%):	approx. 50
Density (20°C, g/cm³):	approx. 1

Properties

- Exceptional Water Repellency: Provides durable, highly effective moisture protection.
- Highly Breathable: Maintains very high water vapor permeability, allowing building facades to "breathe".
- Aesthetic Preservation: Exhibits excellently low dirt pick-up, ensuring long-lasting facade cleanliness.
- Early Rain Resistance: Rapidly develops water resistance shortly after coating application.
- Robust Film-Forming: Forms a resilient, microporous silicone resin network.
- High Alkali Resistance: Very stable in high-pH environments, highly compatible with silicate-based formulations.
- Eco-Friendly: 100% solvent-free, water-borne system.

Application

Manta WS450 acts as a core hydrophobic binder in silicone resin paints and silicone resin plasters. It delivers the optimal balance of driving-rain protection and vapor transmission. Owing to its outstanding alkali resistance, it is also highly recommended as a modifying co-binder for sodium silicate paints (mineral paints) to significantly upgrade their water repellency.

Formulation Guidelines

During the manufacturing process, Manta WS450 is typically incorporated into the water-based coating formulation at the following dosages (calculated by weight relative to the total formulation):
Silicone Resin Paints: 4.0% – 10.0%
Silicone-Modified Acrylic Paints: 2.0% – 4.0%
Silicone Resin Plasters / Renders: 2.0% – 6.0%
SiSi Plasters (Silicate/Silicone Hybrid Renders): 2.0% – 4.0%
Formulator's Tip: While Manta WS450 provides an exceptional microporous water-repellent network, to achieve a pronounced surface water-beading (lotus) effect, we strongly recommend formulating it in combination with 1.0% – 3.0% of Manta WS136 (Water-Repellent Additive).

Packaging

In 190kg drum and 950kg IBC

Safety and Storage

Temperature Sensitivity: Manta WS450 is an aqueous emulsion highly sensitive to frost and extreme heat. Store indoors at temperatures strictly between 5°C and 40°C.
Storage Risks: Exposure to temperatures outside this range may cause irreversible emulsion breakage (phase separation).
Quality Verification: In the event of suspected frost or heat damage, the viability and homogeneity of the product must be thoroughly verified prior to any formulation or application.
Shelf Life: 12 months when stored properly in original, unopened containers. It is classified as a non-hazardous substance.

Contact Information

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