MANTA

Technical Data Sheet

Version: 1.0

Manta H101 Series

Methyl Hydrogen Silicone Fluid (Polymethylhydrogensiloxane)

Description

Manta H101 is a reactive methyl hydrogen silicone fluid (chemically identified as Polymethylhydrogensiloxane). H101-20 is a trimethylsiloxy-terminated polymethylhydrogensiloxane, (CH3)3SiO[(CH3)(H)SiO]nSi(CH3)3 (CAS 63148-57-2); H101-100 is a hydride-terminated polydimethylsiloxane, H(CH3)2SiO[(CH3)2SiO]mSi(CH3)2H (CAS 70900-21-9).

Beyond exhibiting the excellent inherent properties of standard dimethyl silicone fluids—such as outstanding lubricity and thermal stability—Manta H101 is distinguished by the presence of highly reactive silicon-hydride (Si-H) bonds along its polymer backbone (H101-20) or at its chain ends (H101-100). This chemical architecture allows it to function as a versatile crosslinker and participate readily in hydrosilylation reactions. Upon proper catalysis, it generates a highly durable, optically clear, and very hydrophobic polymeric network.

Manta H101-20: Performance equivalent to Dow XIAMETER™ OFX-1107, Wacker SILRES® BS 94, Wacker CROSSLINKER V 88 / L 31, Shin-Etsu KF-99 and Momentive TSF484.

Typical Physical Properties

Manta Code:	H101-20 (High Hydrogen)	H101-100 (Low Hydrogen)
Chemical Name:	Polymethylhydrogensiloxane	Hydrogen silicone fluid
Synonyms:	Methylhydrogensiloxane	
CAS No.:	63148-57-2	70900-21-9
Appearance:	Colorless transparent liquid	Colorless transparent liquid
Viscosity (25°C, mPa·s):	15 ~ 50	20 ~ 500
Refractive Index (25°C) :	1.3900 ~ 1.4000	1.390–1.410
Density (25°C):	0.98 ~ 1.02	0.98 ~ 0.99
Hydrogen Content:	≥1.5%	0.01–0.04% (can be customized)
pH Value:	6~7	6 ~ 7
Volatiles (%):	≤1	
Primary Function:	Gypsum / Powder Water Repellent	LSR Chain Extender

Applications

1. Building & Construction Waterproofing

Gypsum & Dry-Mix Mortars (Internal Addition): Acts as a highly efficient mass water repellent when incorporated into plasterboards, gypsum blocks, or dry-mix mortars, significantly reducing capillary water absorption.

Ceramics & Clay Products (Surface Treatment): Serves as an effective hydrophobic treatment for neutral or slightly acidic fired clay bricks, roofing tiles, and ceramics.

2. Addition-Cure Silicone Rubber

Addition-Cure Silicones: H101-20 functions as a cross-linking agent for Liquid Silicone Rubber (LSR), Room Temperature Vulcanizing (RTV) and High Temperature Vulcanizing (HTV) silicone systems via platinum-catalyzed hydrosilylation; H101-100, with Si-H only at both chain ends, acts as a chain extender in addition-cure LSR to increase elongation at break and lower hardness.

3. Powder & Filler Treatment

Dry Chemical Extinguishers: Extensively used for the hydrophobic surface encapsulation of BC or ABC dry chemical extinguishing powders to prevent moisture caking and ensure excellent

flowability.
Inorganic Fillers: Modifies powders such as talc, mica, and metal oxides to enhance their hydrophobicity and dispersion in organic media.
4. Textile & Leather Treatment
Fabric Waterproofing: When formulated into an aqueous emulsion and combined with an appropriate metal salt catalyst, it cross-links to form a breathable, protective membrane on fabrics, imparting exceptional durable water repellency (DWR).
5. Industrial Chemical Intermediates
Polyurethane (PU) Foam: Acts as an important reactive intermediate for synthesizing PU foam stabilizers (polyether-modified silicones).

Application Guidelines & Critical Notes

- Water-Repellent Treatment of Plasterboards & Gypsum Elements: Manta H101 is designed to be added directly to the mixing / gauging water of the plaster. The addition of just 0.1% – 0.5% Manta H101, based on the weight of the dry plaster, significantly reduces capillary water absorption.
- Formulation Variables: The efficiency of Manta H101 heavily depends on the specific kind of plaster, the water-to-gypsum ratio, and the presence of additives such as starch, cellulose ethers, or surfactants. Preliminary lab tests are always necessary to establish the optimal dosage for your specific system.
- Critical Note on Alkalinity & Surface Treatment: Alkaline impurities in the plaster formulation will prematurely catalyze the Si-H bonds, leading to the rapid evolution of hydrogen gas bubbles. This outgassing can cause an undesirable decrease in the bulk density and compromise the final water repellency of the plaster elements. Manta H101 is strictly designed for mass hydrophobation (internal addition) and is not recommended for the topical surface treatment of plaster elements.

Packaging

In 50kg, 200kg drum and 1000kg IBC.

Safety and Storage

Keep in a cool and dry place and avoid storage in direct sunlight. Shelf life is 12 months. It is non-hazardous substance.

Contact Information

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