



Technical Data Sheet

DOWSIL™ MH 1109 Fluid

Active component for formulating penetrating water repellent treatments

Features & Benefits

- Specially developed as a water repellent for natural stone substrates
- Dilutable in organic solvent to formulate water repellent products
- Produces a hydrophobic treatment that inhibits water absorption
- Excellent performance at low active solids levels, in range of 5–10 percent
- Chemically bonds to the substrates
- UV stable to increase treatment life
- Water vapor permeable but resistant to liquid water
- Reduction in water absorption reduces cracking and spalling due to freeze thaw and efflorescence, thereby increasing substrate life
- Penetrating treatment will not change appearance of substrate
- Performs at low solids levels allowing higher dilution rates

Composition

- Solvent free siloxane
- Clear liquid

Applications

- For use on neutral and alkaline mineral substrates that require water repellency such as limestone, sandstone, granite, marble, brick and stone

Typical Properties

Specification Writers: These values are not intended for use in preparing specifications.

Test	Unit	Result
Color		Clear to slightly hazy
Active Ingredient	percent	100
Non-Volatile Content	percent	70.1
Specific Gravity at 25°C (77°F)		0.98
Flash Point, closed cup	°C (°F)	30 (86)
Density	g/mL (lbs./gal)	0.98 (8.17)
Volatile Organic Compound (VOC) Content	g/L (lbs./gal)	294 (2.51)
Solvent (Thinner)		Organic solvent

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DOWSIL™ MH 1109 Fluid

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Description

DOWSIL™ MH 1109 Fluid is a solvent free siloxane that can be diluted in organic solvents to formulate water repellents. Properly applied, the formulated product will penetrate and chemically react with the substrate, making it hydrophobic while retaining its original appearance. DOWSIL MH 1109 Fluid was specially developed for use on natural stone substrates such as limestone and sandstone, but also provides water repellency to other neutral and alkaline substrates.

The active ingredients in DOWSIL MH 1109 Fluid react with moisture to produce hydroxy groups. The hydroxy groups bond with the substrate and themselves to produce a hydrophobic treatment that inhibits water absorption into the substrate. Exposure to water before use as a treatment may cause the material to cure in the container.

How To Use

Dilution

DOWSIL MH 1109 Fluid should be diluted in organic solvents such as aliphatic hydrocarbons, aromatic hydrocarbons, anhydrous alcohol or chlorinated solvents before use.

Laboratory performance data for 5, 10 and 20 percent active solids levels of DOWSIL MH 1109 Fluid are shown in Table 1. The performance may vary depending on active solids level applied to different substrates. Optimization of the active solids level may be required to obtain maximum performance on your selected substrates.

VOC-compliant formulations with less than 600 g/L VOC can be achieved with DOWSIL MH 1109 Fluid by using a VOC compliant solvent such as DOWSIL™ 244 Fluid. Examples of VOC-compliant formulations can be found in Table 2.

Table 1: Performance of DOWSIL MH 1109 Fluid on Various Substrates

Substrate/%Active Solids			
Neutral Substrates	% Water Exclusion ¹ vs. Control after 24 hour Immersion ²	% Water Exclusion vs. Control after 3 day Immersion	% Water Exclusion vs. Control after 7 day Immersion
Limestone			
5% MH-1109 Fluid	81.9	77.3	58.1
10% MH-1109 Fluid	81.4	77.0	58.7
20% MH-1109 Fluid	82.7	78.0	65.0
Sandstone			
5% MH-1109 Fluid	88.3	85.1	66.6
10% MH-1109 Fluid	87.4	78.3	57.8
20% MH-1109 Fluid	72.8	72.0	55.9
Beldon Belcrest 760 Brick			
5% MH-1109 Fluid	92.5	79.1	73.5
10% MH-1109 Fluid	93.5	83.1	76.6
20% MH-1109 Fluid	93.7	88.3	75.5

1. Calculation is based on weight gain of untreated control cube.

2. ASTM C 67 modified to use 1/8 of a brick instead of 1/2 of a brick, with 3 specimens instead of 5.

Table 1: Performance of DOWSIL MH 1109 Fluid on Various Substrates (Cont.)

Substrate/%Active Solids			
Neutral Substrates	% Water Exclusion vs. Control after 24 hour Immersion	% Water Exclusion vs. Control after 3 day Immersion	% Water Exclusion vs. Control after 7 day Immersion
Beldon Belcrest 350 Brick			
5% MH-1109 Fluid	89.6	77.1	63.7
10% MH-1109 Fluid	90.0	74.5	57.1
20% MH-1109 Fluid	90.4	78.9	73.7
Beldon 350/550 Brick			
5% MH-1109 Fluid	94.1	86.2	82.2
10% MH-1109 Fluid	92.7	88.7	80.9
20% MH-1109 Fluid	91.1	88.6	80.7

Table 2: VOC Compliant (< 600 g/L) DOWSIL MH 1109 Fluid Fluid Formulations using DOWSIL 244 Fluid

DOWSIL MH 1109 Fluid; diluted in solvent, percent concentration		
DOWSIL MH 1109 Fluid	DOWSIL™ 244 Fluid	Organic Solvent
5.0	89.0	6.0
10.0	78.0	12.0
15.0	66.0	19.0
20.0	55.0	25.0
30.0	32.0	38.0
40.0	9.0	51.0
50.0	0.0	50.0

Application

Methods of application include airless sprayer, roller and brush. When a brush or roller is used, repeat applications until the surface remains moist for a few minutes. If an airless sprayer is used, continue application until the substrate is thoroughly saturated. On vertical applications, apply material from the bottom up to achieve a 6 to 8 inch rundown. Fit sprayers with solvent resistant hoses and gaskets.

To ensure compatibility and the desired water repellent result, a test application is necessary on each surface to be treated. Surfaces should be free of standing water, surface dirt, dust, oils and other contaminants. Plants or shrubs should be protected from exposure to the treatment.

Windows and any other material that should not be treated must be protected, otherwise cleaning with solvents may be necessary to remove the treatment. Likewise, if applied as spray, control overspray and drift to prevent contamination of nearby substrates, especially windows, vehicles, etc.

**Handling
Precautions**

DOWSIL MH 1109 Fluid evolves hydrogen upon cure. Exposure to water may cause the material to cure in the container. Use dry solvents when diluting the product. During the dilution procedure, limit exposure to air.

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<p>Handling Precautions (Cont.)</p>	<p>Take safety precautions at all times. Do not store or use near sparks or open flames. Do not smoke in the vicinity of application. Use this material in a well ventilated area away from sparks and open flames. Always wear protective goggles and gloves.</p> <p>If inhaled, move immediately to fresh air. In case of skin or eye contact, flush immediately with water for 15 minutes. Remove contaminated clothing and shoes and call a physician. Local, state and federal regulations should be consulted for proper disposal procedures.</p> <p>PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT WWW.CONSUMER.DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.</p>
<p>Usable Life And Storage</p>	<p>When stored in original, airtight containers at or below 25°C (77°F), DOWSIL MH 1109 Fluid has a shelf life of 12 months from date of manufacture. Refer to product packaging for "Use By" date.</p> <p>Keep away from heat and open flame.</p>
<p>Packaging</p>	<p>DOWSIL MH 1109 Fluid is supplied in 20 kg (44.1 lbs.) pails and 200 kg (441 lbs.) containers, net weight.</p>
<p>Limitations</p>	<p>Do not use on structures under hydrostatic pressure. Do not apply when temperature is at or below 4°C (40°F).</p> <p>This product is neither tested nor represented as suitable for medical or pharmaceutical uses.</p>
<p>Shipping Limitations</p>	<p>DOT Classification: Flammable liquid.</p>
<p>Health And Environmental Information</p>	<p>To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.</p> <p>For further information, please see our website, www.consumer.dow.com or consult your local Dow representative.</p>

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