

Hydrophobic Treatments For Glass and Ceramics

Features: Provides water-repellent silicone, molecular films with high durability for glass and vitreous surfaces. Acidic byproducts remove surface alkali from soda-lime glass substrates.





Applications:

laboratory glassware- improves drainage, reduce breakage.

optical fibers- reduces moisture adsorption and surface fracture.

clinical analysis- reduces protein and lipid adsorption. (Not for food or drug use.)

glass plate and glazing- provides high water contact angle, facilitate forced air blow-off.

Capsular Description:	Thickness	 molecular	Cure	 air/moisture	Hardness	 low	Type	 100% active 1-part
-----------------------	-----------	---	------	--	----------	---	------	---

Aquaphobe® CM chlorinated polydimethylsiloxane

Description

Aquaphobe® CM is a chlorine terminated polydimethylsiloxane oligomer. The chlorines react with hydroxy and silanol groups of glass, siliceous surfaces and other metal oxide surfaces to form a chemically bound polydimethylsiloxane “siliconized” surface.

Properties of Treated Surfaces

(Values reported are for glass slides dipped in 1% solutions of Aquaphobe® CM and cured at 100°C.)

critical surface tension

untreated	$\gamma_c = 78$ dynes/cm
treated (hydrophobic)	$\gamma_c = 25$ dynes/cm

Typical Properties of Aquaphobe™ CM

% active	100%
flashpoint	15°C
specific gravity	0.99-1.01
viscosity	3-6 cSt.

Standard Packaging

PP1-AQCM Aquaphobe® CM
100g/\$26.00
1kg/\$196.00
18kg/commercial package

Cautions

Aquaphobe® is a mixture of corrosive chlorinated polysiloxanes. Avoid skin and eye contact. Use in a well ventilated area. Wear gloves and safety glasses.

Application Methods

1. Aquaphobe® coatings are most frequently applied as a 2-10% solution in dry solvents such as hexane, methylene chloride or toluene. Articles are dipped or wiped. Articles can be cured by air drying for 24 hours at conditions of <75% relative humidity. Heat curing at 110°C for 15-20 minutes in an exhausted oven provides the most effective surface treatment.

2. A master batch of Aquaphobe® in isopropanol or ethanol is desirable when large areas are to be treated and the acidic byproducts are difficult to handle. A 0.5-2.0% solution in isopropanol is prepared in a well-ventilated area. Hydrogen chloride fumes issue during this stage. Acidic character is reduced for subsequent surface treatment.

Over treatment results in a cloudy surface. The concentration should be reduced to eliminate this effect.