Gelest Aquaphobe® CF

Hydrophobic and Oleophobic Treatments For Glass and Ceramics

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

Applications:

microcontact printing- provides durable release films for photocureable resins.
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	Cure	Hardness	Type
	 molecular	 air/moisture	 low	 100% active 1-part

Aquaphobe® CF chlorinated fluoroalkylmethylsiloxane

Description
Aquaphobe® CF is a chlorine terminated polyfluoroalkyl-methylsiloxane oligomer. The chlorines react with hydroxy and silanol groups of glass, siliceous surfaces and other metal oxide surfaces to form a chemically bound, low surface energy, fluorinated silicone surface.

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

critical surface tension

untreated	γc = 78 dynes/cm
treated (hydrophobic)	γc = 16-19 dynes/cm

Typical Properties of Aquaphobe® CF

% active	100%
flashpoint	65°C
specific gravity	1.40-1.43
refractive index	1.358
viscosity	6-10 cSt.

Reference:
J. Taniguchi et al, Jpn. Soc. Appl. Phys., 41, 4194, Part 1, No. 6B, 2002

Standard Packaging

PP1-AQCF **Aquaphobe® CF**
25g/$82.00
100g/$266.00

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.