

# XIAMETER<sup>®</sup> OFS-6403 Silane

To assist in formulating penetrating treatments that provide water repellency

## FEATURES

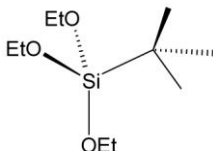
- Can be used in the formulation of water repellent products
- Produces a hydrophobic treatment that inhibits water absorption
- Can improve dispersion of polar fillers in covalent matrices

## BENEFITS

- Small molecular structure for deep penetration of concrete surfaces
- Surface modification can improve compatibility to nonpolar substrates

## COMPOSITION

- Silane
- Liquid



## APPLICATIONS

- Commercial buildings
- Parking decks/garages
- Highways
- Bridge structures
- Filler modification

## TYPICAL PROPERTIES

Specification Writers: These values are not intended for use in preparing specifications. Please contact your local XIAMETER<sup>®</sup> sales representative prior to writing specifications on this product.

Test	Unit	Value
Color		Clear
Purity	%	98
Specific Gravity at 25°C (77°F)		0.88
Flash Point, closed cup	°C (°F)	62 (144)
Density	lb/gal	7.34
Volatile Organic Compound (VOC) Content	g/L	423
Solvent (Thinner)		Isopropanol, ethanol or various flash point mineral spirits

## DESCRIPTION

XIAMETER<sup>®</sup> OFS-6403 Silane is high purity, undiluted isobutyltriethoxysilane. When diluted with an appropriate solvent, it can be used in the formulation of water repellent products. Upon proper application, the formulated product will penetrate and provide water repellency by chemically reacting with the cementitious substrate. Treated substrates are hydrophobic and retain their original appearance.

XIAMETER OFS-6403 Silane can also be used to improve the compatibility of mineral fillers or pigments in polyolefins or to ease their dispersion in nonpolar matrices.

XIAMETER OFS-6403 Silane is a small molecule to allow for deep penetration into the cementitious surface. This material reacts with moisture in the air and in the substrate in the presence of an alkaline or acidic environment to produce hydroxy groups. These hydroxy groups will bond with the substrate and itself to produce a hydrophobic treatment that inhibits water absorption into the substrate. An alkaline environment, such as new concrete, will catalyze the reaction and speed the formation of the hydrophobic surface.

## HOW TO USE

### Dilution

XIAMETER OFS-6403 Silane can be diluted in solvents such as alcohols, chlorinated solvents,

aliphatic solvents and low molecular weight cyclic polydimethylsiloxane such as XIAMETER® PMX-0244 Cyclotetrasiloxane before use. Typical dilution levels are 40 percent and 20 percent XIAMETER OFS-6403 Silane in a solvent. Laboratory performance data for 40 percent dilutions are shown in Table I.

Blends of the solvents can also be used. The evaporation rate of the diluted material can be modified depending on the type and concentration of the solvent. Select the proper solvent for your application, as some silane/solvent blends may darken the surface. Refer to the manufacturer's data sheet for proper handling and disposal of solvents.

**NOTE:** When using any solvent, always provide adequate ventilation. Follow handling precautions on the solvent container label.

### Application

Methods of application include airless sprayer, roller and brush. When a brush or roller is used, repeated applications should be made until the surface remains moist for a few minutes. If an airless sprayer is used, application should continue until the substrate is thoroughly saturated. Sprayers should be fitted with solvent resistant hoses and gaskets.

A test application is necessary on each surface to be treated to ensure compatibility and the desired water repellent result. Surfaces should be free of standing water, surface dirt, dust, oils and other contaminants. Formulated XIAMETER OFS-6403 Silane may be applied to damp

surfaces although dry surfaces are preferred to achieve maximum penetration into the substrate.

Any plants or shrubs should be protected from exposure to the treatment. Any material that should not be exposed to solvents should also be protected.

## PRODUCT SAFETY INFORMATION

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND MATERIAL SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL, ENVIRONMENTAL, AND HEALTH HAZARD INFORMATION. THE MATERIAL SAFETY DATA SHEET IS AVAILABLE ON THE XIAMETER WEB SITE AT WWW.XIAMETER.COM.

## STORAGE

Product should be stored at or below 25°C (77°F) in original, unopened containers. The most up-to-date shelf life information can be found on the XIAMETER Web site in the Product Detail page under Sales Specification.

XIAMETER OFS-6403 Silane is flammable and evolves ethanol upon cure. 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 in a well ventilated area, or wear an air-supplied respirator. Always wear protective goggles and gloves. 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.

## LIMITATIONS

This product is neither tested nor represented as suitable for medical or pharmaceutical uses. Not intended for human injection. Not intended for food use.

Products formulated using XIAMETER OFS-6403 Silane provide more protection when applied to highly alkaline new concrete (less than one year old). The degree of protection is not as effective on old concrete or neutral substrates. Do not use on structures under hydrostatic pressure. Do not apply when temperature is at or below 0°C (32°F) or on extremely windy days when evaporation of the solvent would be too rapid.

## SHIPPING LIMITATIONS

DOT Classification: Flammable liquid.

## LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that our products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

Dow Corning's sole warranty is that our products will meet the sales specifications in effect at the time of shipment.

Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

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**Table 1: Laboratory Performance of Dilution - Modified NCHRP 244 Series II on Concrete<sup>1</sup>**

	Reduction Weight Gain, percent <sup>2</sup>	Average Depth of Penetration, mm <sup>3</sup>
40% in Aliphatic Solvent ( <i>Kwik-Dri</i> <sup>4</sup> )	70.9	3

<sup>1</sup>Water repellent properties of XIAMETER OFS-6403 Silane when diluted to 40 percent in an aliphatic solvent (*Kwik-Dri*<sup>®</sup>).

<sup>2</sup>Modified NCHRP cube test, 2-inch cubes, 21-day immersion in water.

<sup>3</sup>Mortar cubes prepared in accordance with procedures outlined in ASTM C 109.

<sup>4</sup>Kwik-Dri is a trademark of the Marathon Petroleum Company LLC.