

XIAMETER[®] OFS-6030 Silane

Methacrylate functional alkoxy silane

FEATURES

- Methacrylate organoreactive group
- Trimethoxy hydrolysable groups on silicon
- High purity

BENEFITS

- Coupling agent to improve adhesion of organic resins to inorganic surfaces
- Increased composite tensile and flexural strength – both dry and wet
- Improved chemical bonding
- Increased transparency of polyester fiberglass composites

COMPOSITION

- γ -Methacryloxypropyltrimethoxysilane

APPLICATIONS

- XIAMETER[®] OFS-6030 Silane is used as a coupling agent to improve adhesion of free radical cured resins, such as polyester, to inorganic surfaces, including fiberglass, clay, quartz, and other siliceous materials. The improved adhesion increases dry and wet flexural compressive strength of the composite. Wet strength improvements of approximately 100% are possible.
- XIAMETER OFS-6030 Silane can also be used as a resin additive in mineral-reinforced polyester resin. When used as an additive, this silane can provide improvements in composite properties similar to those obtained from a composite fabricated with a silane-treated mineral reinforcement.

TYPICAL PROPERTIES

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

Test	Unit	Value
Appearance		Clear, white to light-straw
Purity	%	98
Specific Gravity at 25°C (77°F)		1.04
Flash Point, open cup	°C (°F)	138 (280)
Refractive index at 25°C (77°F)		1.43
Viscosity at 25°C (77°F)	cst	2.5
Boiling point at 760mm Hg	°C (°F)	190 (374)
Molecular Weight	g/mol	248.35
CAS #		2530-85-0

DESCRIPTION

XIAMETER OFS-6030 Silane is a bifunctional silane containing a methacrylate reactive organic group and a trimethoxysilyl inorganic group.

The product is designated γ -Methacryloxypropyltrimethoxysilane. XIAMETER OFS-6030 Silane possesses both organic and inorganic reactivity, reacting with organic thermoset resins as well as inorganic minerals such as glass and silica. The chemical bonding at the organic/inorganic interface that can occur with organofunctional silanes provides a variety of benefits listed above.

HOW TO USE

XIAMETER OFS-6030 Silane can be applied to inorganic surfaces as a dilute aqueous solution (0.1 to 0.5% silane concentrations). Aqueous solutions are prepared by adjusting the pH of the water from 3.5 to 4.5 with acetic acid and then adding the silane while stirring. After adding the silane to the acidified water, it is necessary to stir the mixture for a minimum of 30 minutes before it hydrolyses and forms a clear homogeneous solution. A hazy solution or droplets on the bottom of the mixing container are evidence

that the silane is not yet in solution clears. Solutions of XIAMETER OFS-6030 Silane in water are not stable indefinitely, and, after standing several days, may deposit an oily phase of condensed polysiloxane. Aqueous solutions of XIAMETER OFS-6030 Silane are notable in that a 0.89% solution in water lowers the surface tension from 72.0 to 38.3 dynes/cm. This suggests that the hydrophobic organic portion of this silane forms an oriented layer at the liquid-air interface.

In the case of mineral fillers, the mineral can be treated by mixing with the silane at very high shear without any additional solvent. Alternatively, the silane can be diluted in an alcohol or pre-hydrolyzed as described above and then mixed with the mineral. The mineral can be dry or in a slurry form.

After applying the silane, the glass or mineral surface should be dried briefly to 104°C to 121°C (220 – 250°F) to effect condensation of silanol groups at the surface and to remove traces of methanol from hydrolysis of the methoxysilane. Optimum application and drying conditions, such as time and temperature, should be determined for each application prior to use in a commercial process.

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 WEBSITE AT WWW.XIAMETER.COM.

USABLE LIFE AND STORAGE

Keep away from heat and open flame. The product should be stored at or below 25°C in the original unopened container. Current shelf life information can be found in the sales specifications for this product at www.xiameter.com.

LIMITATIONS

This product is neither tested nor represented as suitable for medical or Pharmaceutical uses.

LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

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