Product Information
Organofunctional Silanes

DOW CORNING

Dow Corning® Z-6030 Silane

FEATURES

- Methacrylate organoreactive group
- Trimethoxy hydrolyzable 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

Methracrylate functional alkoxysilane

APPLICATIONS

- *Dow Corning*® Z-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.
- *Dow Corning*® Z-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

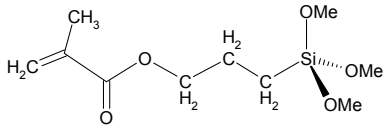
Specification Writers: These values are not intended for use in preparing specifications. Please contact your local Dow Corning sales office or your Global Dow Corning Connection before writing specifications on this product.

CTM*	Property	Unit	Value
0176	Appearance		Clear, white to light-straw
0001A	Specific gravity at 25˚C (77˚F)		1.04
0002	Refractive index at 25˚C (77˚F)		1.43
0021A	Flash point, closed cup	˚C (˚F)	138 (280)
	Purity	%	98
	Boiling point at 760mm Hg	˚C (˚F)	190 (374)
	Viscosity at 25˚C (77˚F)	cst	2.5
	Molecular Weight	g/mol	248.35
	CAS #		2530-85-0

CTM: Corporate Test Method, copies of CTM's are available on request

DESCRIPTION

Dow Corning® Z-6030 Silane is a bifunctional silane containing a methacrylate reactive organic group and a trimethoxysilyl inorganic group.



The product is designated γ-methacryloxypropyltrimethoxysilane. *Dow Corning*® Z-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.

Dow Corning® Z-6030 Silane is one of a series of *Dow Corning* organo functional silane chemicals. Other reactive silanes include the amine (*Dow Corning*® Z-6020 Silane), epoxy (*Dow Corning*® Z-6040 Silane), vinyl *Dow Corning*® Z-6300 Silane) and chloroalkyl (*Dow Corning*® Z-6076 Silane).

HOW TO USE

Dow Corning® Z-6030 Silane can be applied to inorganic surfaces as a dilute aqueous solution (0.1 to 0.5% silane concentration). 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. Continue mixing until the solution clears. Solutions of *Dow Corning*® Z-6030 Silane in water are not stable indefinitely, and, after standing several days, may deposit an oily phase of condensed polysiloxane. Aqueous solutions of *Dow Corning*® Z-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 at 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.

HANDLING PRECAUTIONS

Product safety information required for safe use is not included. Before handling, read product and safety data sheets and container labels for safe use, physical and health hazard information. The material safety data sheet is available on the Dow Corning website at www.dowcorning.com. You can also obtain a copy from your local Dow Corning sales representative or Distributor or by calling your local Dow Corning Global Connection.

USABLE LIFE AND STORAGE

When stored at or below 25°C (77°F) in the original unopened containers, this product has a usable life of 18 months from the date of production.

PACKAGING

This product is available in 18.1kg (40 lb) pails and 210.9kg (465 lb) drums, net weight.

LIMITATIONS

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

HEALTH AND ENVIRONMENTAL INFORMATION

To support Customers in their product safety needs, Dow Corning has an extensive Product Stewardship organization and a team of Product Safety and Regulatory Compliance (PS&RC) specialists available in each area.

For further information, please see our website, www.dowcorning.com or consult your local Dow Corning representative.

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 Dow Corning's 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 the product will meet the Dow Corning 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.

DOW CORNING SPECIFICALLY DISCLAIMS ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY.

DOW CORNING DISCLAIMS LIABILITY FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

We help you invent the future.™

www.dowcorning.com