MOMENTIVE™

Technical Data Sheet

Silquest* A-1871

Silquest* A-1871

Description

Silquest A-1871 silane is an epoxy functional silane that may be used as an adhesion promoter in polysulfide, urethane, epoxy and acrylic caulks, sealants, adhesives and coatings.

Key Features and Benefits

Silquest A-1871 silane contains functional groups with two distinct reactivities; an epoxide capable of reacting with a variety of organic functionalities and alkoxy silane groups that can bond strongly to many inorganic substrates. This ability to chemically link select organic resins to inorganic substrates may offer improved wet and dry adhesion without the potential for yellowing that is present with amino functional adhesion promoters. The ability of silanol groups to self condense also offers the possibility of using Silquest A-1871 silane as a crosslinking agent in some resin systems.

The most significant difference between Silquest A-1871 silane and the familiar Silquest A-187* silane is in the alkoxy substitution. Silquest A-1871 silane is ethoxy not methoxy substituted. This means Silquest A-1871 silane will generate ethanol upon hydrolysis instead of methanol, and under the same conditions will hydrolyze more slowly. The release of ethanol rather than methanol may prove useful when methanol emissions are a concern.

Possible benefits from the use of Silquest A-1871 epoxy silane may include:

- Improved substrate adhesion in many waterborne acrylic and vinyl-acrylic caulks, adhesives and coatings. Use of epoxy silane may avoid the yellowing sometimes seen when amino functional adhesion promoters are used.
- Crosslinking of waterborne latexes and dispersions; acrylic, styrene acrylic or other copolymers, polyurethane or epoxy dispersions, may provide outstanding chemical resistance and mechanical properties to coatings, adhesives or sealants.
- Enhanced adhesion to glass and metal substrates in polyurethane resins, often providing improved shelf stability over aminosilane alternatives.
- Enhanced electrical properties of epoxy based electronic encapsulants and packaging materials, resulting from improved bonding between resin and substrate or filler. Improved wet adhesion reduces the risk of semiconductor or integrated circuit failure as a result of water ingress or surface corrosion.
- Improved wet and dry adhesion, tensile strength and water resistance of quartz-filled epoxy encapsulants, sand-filled epoxy concrete repair materials, and metal-filled epoxy resins for mold die tools.
- Improved adhesion to glass and metal substrates for epoxy, polysulfide, urethane and acrylic-based adhesives, sealants and caulks.

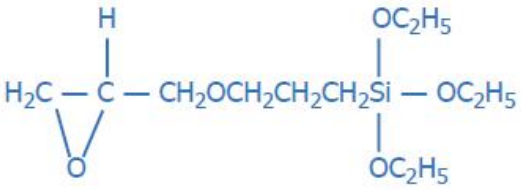
Typical Physical Properties

	Silquest A-1871 Epoxy Silane
CAS Number	2602-34-8
Appearance	Clear, pale
Molecular Weight	278.42
Specific Gravity at 25/25°C	1.0034
Refractive Index nD 25°C	1.426
Flash Point, Tag Closed Cup, °C (°F)	118 (245)
Boiling Point, °C (°F)	304 (579)

Solubility

Silquest A-1871 silane is soluble in water after hydrolysis, and also in alcohol, acetone and aliphatic esters such as methyl acetate at normal application levels under five percent. Hydrolysis releases ethanol.

Chemical Structure



Gamma – Glycidoxypropyltriethoxysilane

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