MOMENTIVE™

Technical Data Sheet

Silquest* A-186

Silquest* A-186

Description

Silquest A-186 silane and Silquest A-187 silane are epoxy functional silanes which may be suitable for use as adhesion promoters in SPUR+, urethane, epoxy, polysulfide, silicone, and acrylic caulks, coatings, sealants and adhesives.

Key Features and Benefits

Features	Benefits
Epoxy Functionality	■ Epoxy ring is reactive with many organic functionalities. ■ Epoxy functionality will offer non-yellowing adhesion in many resin systems. ■ May improve flexibility of systems vs. other adhesion promoters.
Trimethoxy Silane Functionality	■ Bonds to inorganic substrates to provide excellent wet and dry adhesion. ■ Very fast hydrolysis rate.

- Enhanced electrical properties of epoxy based electronic encapsulant and packaging materials, resulting from improved bonding between resin and substrate or filler.
- An excellent candidate for waterborne applications such as acrylic and vinyl-acrylic caulks.
- Improved adhesion to glass, and metal substrates can be obtained in epoxy, polysulfide, urethane and acrylic bases adhesives, sealants and caulks.
  - SPUR+ perpolymer applications benefit from adhesion without decrease in elongation and yellowing.
  - Urethane applications benefit from enhanced adhesion to glass and metal substrates, while providing improved shelf stability over amino silane alternatives. Typical use level ranges from 0.5 to 1.5 pbw.
  - Epoxy applications benefiting from the use of Silquest A-186 silane or Silquest A-187 silane include quartz filled epoxy encapsulants, pre-mix formulations, sand-filled epoxy concrete patching materials, and metal filled epoxy materials suitable for mold die tools. Epoxy encapsulation systems benefit from Momentive Performance Materials epoxy family of Silquest silanes' ability to enhance wet adhesion, reducing the risk of semiconductor or integrated circuit failure due to water ingress or surface corrosion. Typical use level is 1.0 pbw.
  - Polysulfide applications benefit from enhanced adhesion performance, without suffering odor issues associated with mercapto based silanes. Typical use level ranges from 0.5 to 1.5 pbw.
  - Latex caulk applications benefit from enhanced adhesion to glass and metal substrates, without suffering yellowing issues associated with amino silane adhesion promoters. Typical use level ranges from 0.2 to 0.5 pbw.

Typical Physical Properties

	Silquest A-186 Silane	Silquest A-187 Silane
Appearance	Clear, pale	Clear, pale
Molecular Weight	246.1	236.1

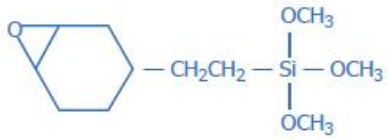
Specific Gravity at 25/25°C	1.065	1.069
Refractive Index nD 25°C	1.448	1.427
Flash Point, Tag Closed Cup, °C (°F)	113 (235)	
Flash Point, ASTM D 93, °C (°F)		110 (230)
Boiling Point, °C (°F)	310 (590)	290 (554)

Solubility

Silquest A-186 silane and Silquest A-187 silane are soluble in water after hydrolysis, alcohol, acetone and most aliphatic esters at normal application levels under five percent. Hydrolysis releases methanol.

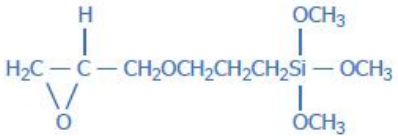
Chemical Structure

Silquest A-186 Silane



Beta-(3,4-Epoxycyclohexyl)ethyltrimethoxysilane

Silquest A-187 Silane



Gamma-Glycidoxypropyltrimethoxysilane

Patent Status

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other materials in conjunction with MPM products (for example, primers) may require additional precautions. Please review and follow the safety information provided by the manufacturer of such other materials.

Limitations

Customers must evaluate Momentive Performance Materials products and make their own determination as to fitness of use in their particular applications.

From automotive to healthcare, from electronics to construction, products from Momentive Performance Materials Inc. are practically everywhere you look. We are a global leader in silicones and advanced materials with a 70+ year heritage of innovation and being first to market – with performance applications that improve everyday life. By knowing our customers' needs and creating custom technology platforms for them, we provide science based solutions to help customers increase performance, solve product development issues and engineer better manufacturing processes.

Contact Information

For product prices, availability, or order placement, contact our customer service by visiting www.momentive.com/Contacts

For literature and technical assistance, visit our website at: www.momentive.com

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