

## Silquest\* A-171

### Description

Silquest A-171 silane offers vinyl and silane functionality, making them suitable for crosslinking organic polymers. The resulting Si-O-Si crosslink sites are highly resistant to exposure to moisture, chemicals and UV. Siloxane crosslinks tend to not generate color and are resistant to environmental factors, such as acid rain.

Silquest A-171 silane may also be useful as a moisture scavenger in moisture cure systems where enhanced shelf-life is sought.

### Key Features and Benefits

Feature	Benefit
Vinyl Functionality	<ul style="list-style-type: none"> <li>• Vinyl functionality allows free radical addition to polymers.</li> <li>• Increases the rate of silane hydrolysis.</li> </ul>
Trimethoxy Silane Functionality	<ul style="list-style-type: none"> <li>• Bonds to inorganic substrates to provide excellent wet and dry adhesion.</li> <li>• Functions as a crosslinker.</li> <li>• Useful as a moisture scavenger.</li> </ul>

### Typical Physical Properties

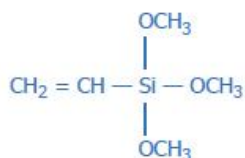
	Silquest A-171 Silane
Appearance	Colorless to Light Straw
Specific Gravity at 25/25°C	0.97
Refractive Index $n_D$ 25°C	1.3905
Flash Point, Tag Closed Cup, °C (°F)	28 (82)
Boiling Point, °C (°F)	122 (252)

### Solubility

Momentive Performance Materials family of vinyl Silquest silanes are soluble in water after they have been hydrolyzed. Hydrolyzing Silquest A-171 silane in water is aided by adjusting the pH of the water to 5.0-5.5 with acetic acid prior to adding the silane.

### Chemical Structure

Silquest A-171 Silane



Vinyltrimethoxy Silane

### Potential Applications

Crosslinking with the Momentive Performance Materials family of vinyl Silquest silanes Silquest A-171 silane are monomeric vinyl functional silanes in vinyl, vinyl acrylic and acrylic resins. The vinyl silanes can be added as monomers during emulsion poly merization to form silane modified latexes. The silanes in such latexes function as crosslinkers, forming very stable Si-O-Si linkages.

Vinyl silanes can also be grafted to select unsaturated polymers such as polyethylene, polyester, and styrene-butadiene co-polymers, via free radical chemistry. Once grafted to the resin, the resin exhibits silane functionality through which the resin can be crosslinked via an ambient moisture cure mechanism. This approach can be utilized to provide improved high temperature resistance, tensile and tear strengths to thermoplastic resin-based materials.

With the addition of an adhesion promoting silane, such as Silquest A-1110 silane or Silquest A-1120 silane, excellent adhesion to a wide array of substrates can be obtained (Note: See literature on SPUR\* prepolymer-based technology for additional information on synergistic use of Silquest silane crosslinkers and adhesion promoters for excellent adhesion to difficult substrates). This approach may be suitable to warm applied hot melt adhesive and sealant applications.

Moisture Scavenging with Momentive Performance Materials vinyl functional Silquest silanes. The electron withdrawing effect imparted by the silanes vinyl functionality enhances the rate of hydrolysis. This increased reactivity makes Silquest A-171 silane one of the fastest hydrolyzing alkoxy silanes available. The elevated rate of hydrolysis is sufficient to enable Silquest A-171 silane to be utilized as a moisture scavenging agent in moisture sensitive systems.

Silquest A-171 silane can be incorporated into urethane, silylated polyurethane (SPUR prepolymer) or other

silane modified polymer based sealants and adhesives to extend the systems shelf-life.

### **Patent Status**

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute the permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

### **Product Safety, Handling and Storage**

Customers should review the latest Safety Data Sheet (SDS) and label for product safety information, safe handling instructions, personal protective equipment if necessary, emergency service contact information, and any special storage conditions required for safety. Momentive Performance Materials (MPM) maintains an around-the-clock emergency service for its products. SDS are available at [www.momentive.com](http://www.momentive.com) or, upon request, from any MPM representative. For product storage and handling procedures to maintain the product quality within our stated specifications, please review Certificates of Analysis, which are available in the Order Center. Use of 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.

### **Contact Information**

For product prices, availability, or order placement, contact our customer service at [Momentive.com/CustomerService/](http://Momentive.com/CustomerService/)

For literature and technical assistance, visit our website at: [www.momentive.com](http://www.momentive.com)

### **DISCLAIMER:**

**THE MATERIALS, PRODUCTS AND SERVICES OF MOMENTIVE PERFORMANCE MATERIALS INC. AND ITS SUBSIDIARIES AND AFFILIATES (COLLECTIVELY "SUPPLIER"), ARE SOLD SUBJECT TO SUPPLIER'S STANDARD CONDITIONS OF SALE, WHICH ARE INCLUDED IN THE APPLICABLE DISTRIBUTOR OR OTHER SALES AGREEMENT, PRINTED ON THE BACK OF ORDER ACKNOWLEDGMENTS AND INVOICES, AND AVAILABLE UPON REQUEST. ALTHOUGH ANY INFORMATION, RECOMMENDATIONS, OR ADVICE CONTAINED HEREIN IS GIVEN IN GOOD FAITH, SUPPLIER MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, (i) THAT THE RESULTS DESCRIBED HEREIN WILL BE OBTAINED UNDER END-USE CONDITIONS, OR (ii) AS TO THE EFFECTIVENESS OR SAFETY OF ANY DESIGN INCORPORATING ITS PRODUCTS, MATERIALS, SERVICES, RECOMMENDATIONS OR ADVICE. EXCEPT AS PROVIDED IN SUPPLIER'S STANDARD CONDITIONS OF SALE, SUPPLIER AND ITS REPRESENTATIVES SHALL IN NO EVENT BE RESPONSIBLE FOR**

**ANY LOSS RESULTING FROM ANY USE OF ITS MATERIALS, PRODUCTS OR SERVICES DESCRIBED HEREIN.**

Each user bears full responsibility for making its own determination as to the suitability of Supplier's materials, services, recommendations, or advice for its own particular use. Each user must identify and perform all tests and analyses necessary to assure that its finished parts incorporating Supplier's products, materials, or services will be safe and suitable for use under end-use conditions. Nothing in this or any other document, nor any oral recommendation or advice, shall be deemed to alter, vary, supersede, or waive any provision of Supplier's standard Conditions of Sale or this Disclaimer, unless any such modification is specifically agreed to in a writing signed by Supplier. No statement contained herein concerning a possible or suggested use of any material, product, service or design is intended, or should be construed, to grant any license under any patent or other intellectual property right of Supplier covering such use or design, or as a recommendation for the use of such material, product, service or design in the infringement of any patent or other intellectual property right.

**Momentive and the Momentive logo are trademarks of Momentive Performance Materials Inc.**