

# SILQUEST\* A-1110 silane

SILANES - ADHESIVES & SEALANTS ADDITIVES



Silquest A-1110 silane, a primary amino silane, is a candidate for use as an adhesion promoter in silane modified urethane (SPUR<sup>+</sup> prepolymer), filled silicone, epoxy and 2 part urethane adhesives and sealants. Additionally, Silquest A-1110 silane may be particularly useful in applications in which adhesion to plastic is sought. When utilized as an adhesion promoter in a two part urethane system exceptional adhesion to glass, metal and many difficult plastics such as PVC, Polystyrene, and Nylon can be anticipated.

Silquest A-1110 silane can also be employed as an endcapper in polyurethane resins to provide an isocyanate-free moisture cure crosslinking mechanism in one part systems.

## Key Features and Typical Benefits

Feature	Benefit
Amino Functional	<ul style="list-style-type: none"> <li>Fast amino reactivity with isocyanate functional polymers</li> <li>Amino group is reactive with many resins such as: epoxies, phenolics and acrylics</li> <li>Catalyzes silane reactivity</li> </ul>
Trimethoxy Silane Functionality	<ul style="list-style-type: none"> <li>Bonds to inorganic containing substrates to provide excellent wet and dry adhesion</li> <li>Fast adhesion and/or cure rates</li> </ul>

## Typical Physical Properties

Appearance	Light straw
Molecular Weight	179
Specific Gravity at 25/25°C	1.014
Flash Point, Tag Closed Cup, °C (°F)	82 (180)
Boiling Point, °C (°F)	210 (410)

## Solubility

Silquest A-1110 silane is soluble in a wide range of organic solvents. When dissolved in water it hydrolyzes to form a water soluble solution of silane triol.

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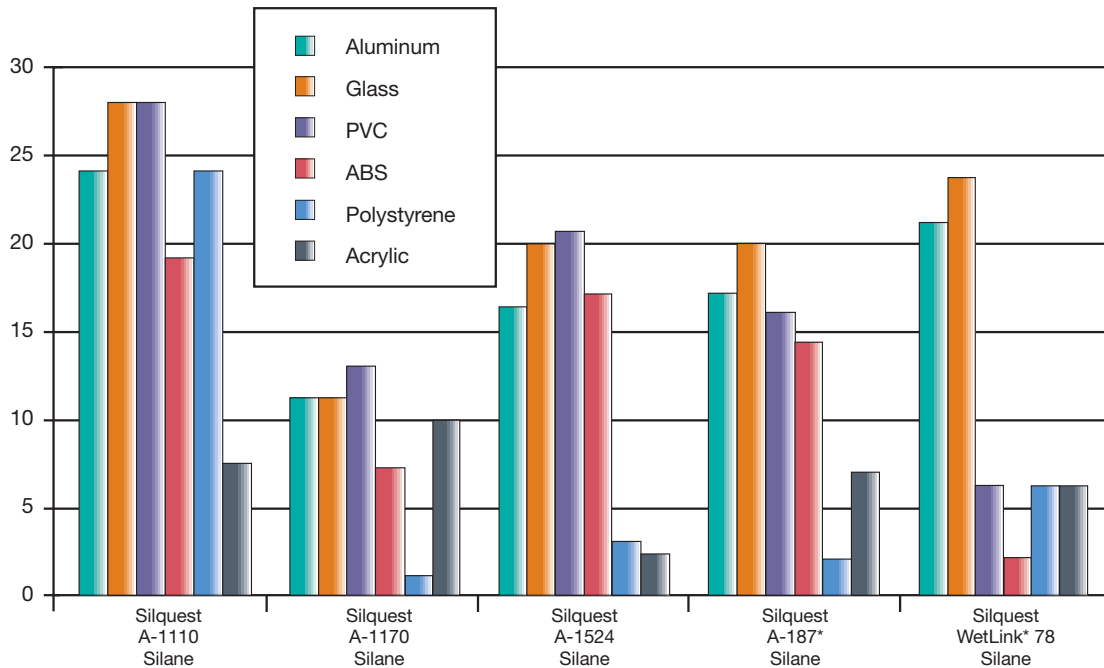
## Key Features and Typical Benefits (continued)

### Adhesion Promotion with Silquest A-1110 Silane

- Silquest A-1110 silane can be utilized in two part epoxy based systems to enhance wet adhesion. Its primary amino functionality will also act as a hardening agent.
- Silquest A-1110 silane can be utilized on the polyol side of a 2 part urethane adhesive or sealant to enhance wet adhesion.

Silquest A-1110 silane may provide exceptional adhesion to many plastics. The use of Silquest A-1110 silane as an adhesion promoter in sealants and adhesives using silane

modified urethanes (prepared using Momentive Performance Materials SPUR+\* prepolymer technology) provided exceptional adhesion to PVC, ABS, Polystyrene, and Nylon, in addition to the traditional improvements in wet adhesion to glass and various metals. (For more information on SPUR+ prepolymer refer to Momentive Performance Materials SPUR+ prepolymer Technology Literature). Examples of relative adhesion promoter performance offered by Silquest A-1110 silane in a silane modified urethanes (SPUR+ Technology) is summarized in the chart below.



Substrate	Adhesion Promoter (1.5 phr)				
	Silquest A-1110 Silane	Silquest A-1170 Silane	Silquest A-1524 <sup>(g)</sup> Silane	Silquest A-187 <sup>(g)</sup> Silane	Silquest WetLink 78 <sup>(g)</sup> Silane
Aluminum	24 (C) <sup>(f)</sup>	11 (C)	16 (C)	17 (C)	21 (C)
Glass	28 (C)	11 (C)	20 (C)	20 (C)	24 (C)
PVC	28 (C)	13 (C)	21 (C)	16 (C)	6 (C/A)
ABS	19 (C)	7 (A)	17 (C/A)	14 (C)	2 (C/A)
Polystyrene	24 (C)	1 (A)	3 (C)	2 (A)	6 (C/A)
Acrylic	7 (A)	10 C/A	2 (A)	7 (A)	6 (A)
Tack Free Time (hrs.) <sup>(a)</sup>	5.0	3.0	4.0	4.0	4.0
Hardness (Shore A) <sup>(b)</sup>	23	23	28	26	21
Elongation (%) <sup>(c)</sup>	357	272	366	464	872
Tensile Strength (psi) <sup>(c)</sup>	173	155	182	160	190
100% Modulus (psi) <sup>(c)</sup>	57	64	57	42	29
200% Modulus (psi) <sup>(c)</sup>	101	117	103	83	50
Tear (lbs/in) <sup>(d)</sup>	26	27	25	25	33
Sealant Viscosity (cps)	422,400	409,600	435,200	425,000	448,000

\*Silquest, Silquest A-187, WetLink and SPUR+ are trademarks of Momentive Performance Materials Inc.

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### Key Features and Typical Benefits (continued)

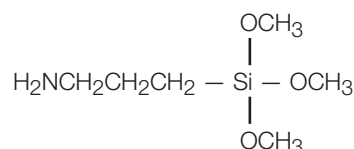
#### Crosslinking with Silquest A-1110 Silane

Silquest A-1110 silane can also be utilized as an isocyanate terminated urethane prepolymer endcapper. Due to the reactivity of its primary amino group, best results are achieved when the urethane prepolymer has been fully endcapped. The primary amino functionality will crosslink the system unless a slight silane excess is used. Fully endcapping the polymer yields a moisture curable isocyanate-free polymer. When utilized in combination with another aminosilane adhesion promoter (e.g., additional Silquest A-1110 silane or Silquest A-1120 silane) exceptional adhesion to plastics can be obtained.

For additional information regarding Momentive Performance Materials SPUR\*\* prepolymer Technology review the following Momentive Performance Materials literature pieces:

- Momentive Performance Materials Y-9669 Silane
- Hybrid Urethane Construction Sealants
- Adhesion to Plastics with SPUR Sealants.

#### Chemical Structure



*Gamma*-Aminopropyltrimethoxy Silane

#### Commercial Status

Silquest A-1110 silane is commercially available. Contact your sales or customer service representative to enter a sample request, or place an order.

#### Emergency Service

Momentive Performance Materials maintains an around-the-clock emergency service for its products.

<u>Location</u>	<u>Emergency Service Provider</u>	<u>Emergency Contact Number</u>
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