



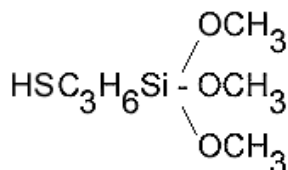
**ADVANCED POLYMER, INC.**

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## AP-SILANE 81

AP-SILANE 81 is a  $\gamma$ -Mercaptopropyl trimethoxy silane coupling agent . AP-SILANE 81 has both organic and inorganic reactivity. Due to its unique functionality AP-SILANE 81 will impart superior adhesion and strength properties.

### CHEMICAL STRUCTURE



### CHARACTERISTICS

- Improved adhesion.
- Increased composite wet and dry tensile and modulus.
- Increased flexural strength.
- Increased wet and dry compressive strength.

### APPLICATION

AP-SILANE 81 is recommended for unsaturated polyester and thermo-set composites.

### PACKAGING

AP-SILANE 81 is available in 4 oz. samples and 441-lb. drums.

### Advanced Polymer, Inc.

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**I want to know more!**

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### TYPICAL PROPERTIES

Appearance:	Clear liquid
Molecular Weight:	196.4
Ionic Nature:	Nonionic
Specific Gravity (@ 25°C):	1.06
Purity:	>98.0%
Refractive Index (@ 25°C):	1.440
Minimum Coverage Area:	398 m <sup>2</sup> /g

You may also be interested in . . .

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## AP-SILANE 81

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### Section I Product Identity

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Product Name: AP-SILANE 81  
Chemical Name/Family:  $\gamma$ -Mercaptopropyl trimethoxy silane  
CAS Registry: #4420-74-0

All ingredients are listed in EPA's TSCA list of chemical substances

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### Section II Hazardous Components/Composition Information

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CHEMICAL	$\gamma$ -Mercaptopropyl trimethoxy silane
CAS #	4420-74-0
USOS	
TWA	200 ppm (methanol decomposed products)
STEL	250 ppm
PERCENT	>98

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### Section III Physical and Chemical Properties

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Boiling Point	219°C
Specific Gravity (H <sub>2</sub> O=1)	1.06
Vapor Pressure	<10 mm Hg
Vapor Density (Air=1)	>6.8
Percent Volatile By Weight	N/A
Evaporation Rate (BuAc=1)	<1
Solubility in Water	Soluble
Appearance and Odor	Colorless, transparent liquid with mercaptan odor.

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### Section IV Fire and Explosion Hazard Data

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Flash Point (Method Used)	149°C (Closed Cup)
Flammable Limits in Air (% By Volume)	N.D.
Extinguishing Media	Foam, Dry Chemical, CO <sub>2</sub>
Special Fire Fighting Procedures:	Evacuate personnel to a safe area. Wear self-contained breathing apparatus with a full face piece operated in pressure demand or positive pressure mode. Wear full protective equipment. Do not release runoff from fire control methods to sewers or waterways.
Unusual Fire and Explosion Hazard	Thermal breakdown of this product during fire or very high heat conditions may evolve the following hazardous decomposition products: Carbon oxides and traces of incompletely burned carbon compounds, silicone dioxide, nitrogen oxides.

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## Section V Reactivity Data

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Stability	Stable
Conditions to Avoid	Exposure to moisture will gradually hydrolyze—methanol vapors may form. Store in a well-ventilated place at temperatures below 120°F. Keep container tightly closed. Keep from freezing
Incompatibilities	Will hydrolyze with water, but no hazard. Avoid contact with strong oxidizing agents and acids.
Hazardous Decomposition or By Products	Combustion may produce CO <sub>2</sub> , CO and methanol (flammable liquid)
Hazardous Polymerization	May Not Occur

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## Section VI Health hazard Data

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Primary Routes of Entry	Inhalation: Yes	Dermal: Yes	Ingestion: Yes
Acute Health hazard	LD50 (oral/rat) 1.46 ml/kg; 5.628 g/kg (methanol decomposed product)		
Chronic Health Hazard	No information available		
Carcinogenicity			
NTP: No	IARC Monograph: No	OSHA Regulated: No	

### Signs and Symptoms of Exposure:

Skin Contact	Prolonged and repeated contact with skin can cause defatting and drying of the skin resulting in skin irritation and dermatitis. May cause severe irritation.
Eye Contact	Preexisting eye, skin and respiratory disorders may be aggravated by exposure to this product. May cause severe irritation.
Ingestion	Although ingestion is unlikely, liquid may irritate upper digestive tract if swallowed. May cause severe irritation.
Inhalation	May cause severe irritation.

### Medical Condition Generally Aggravated by Exposure

### Emergency First Aid Procedures

Eyes	Immediately flush eyes with plenty of water. Call a physician.
Skin	Immediately wash skin with soap and water. Wash contaminated clothing before reuse.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician.
Inhalation	Immediately remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. Please note: Symptoms may be delayed; prompt medical attention may be required. Call a physician.

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## Section VII Precautions for Safe Handling and Use

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### Steps to be Taken in Case the Material is Released or Spilled:

Turn off ignition sources. Soak up with sand, oil dry or other absorbent material. Do not reuse emptied container. This container will be very hazardous when emptied. Residues will be explosives or flammables. Do not puncture or rupture container. Do not weld on this container.

Waste Disposal Method As in accordance with EPA and local regulations. All containers should be thoroughly emptied before disposal.

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## Section VIII Special Precautions

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### Precautions to be Taken in Handling and Storage:

Store in a well-ventilated place at temperatures below 120°F. Keep container tightly closed. Keep away from heat, sparks and flames. Keep container tightly closed away from moisture and water. \*\*\* Agitate contents of container before using.\*\*\*

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**Section IX Control Measures**

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Respiratory Protection:	Ventilation	Local exhaust	Recommended
		Mechanical	Adequate ventilation system
		Special	
		Other	
Eye Protection:	Safety glasses should be worn		
Protective Gloves	Rubber or plastic gloves should be worn		
Protective Clothing;	Rubber apron		
Other Protective Equipment:	Eye wash equipment and safety shower should be available. NIOSH approved respirator as needed		
Other Precautions:	Wash hands after use.		

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**Section X SARA Title III**

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**SECTION 313 SUPPLIER NOTIFICATION**

This product contains the following toxic chemicals subject to the reporting requirements of SECTION 331 of the EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT OF 1986 and of 40 CFR 371

CAS #

Chemical Name                      None

Percent by Weight

THIS INFORMATION MUST BE INCLUDED IN ALL MSDS'S THAT ARE DCOPIED AND DISTRIBUTED FOR THIS MATERIAL

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**Section XI Transportation Information**

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**SHIPPING INFORMATION—DOT Transportation Data (49 CFR 172.101)**

Shipping Name	Combustible Liquid N.O.S. (silanes)
Hazard Class	3
Packing Group	III
Special Provisions (172.102)	None

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**Hazard Ratings**

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Health	2
Flammability	2
Reactivity	2

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Prepared By ..... API  
Date Revised ..... October 27, 2009  
Revised By ..... API

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