

## SAFETY DATA SHEET

---

### 1. IDENTIFICATION

**Product Name:** DAPCO™ 3301 Silicone Adhesive, Part A  
**Synonyms:** None  
**Chemical Family:** Silicone in toluene  
**Molecular Formula:** Mixture  
**Molecular Weight:** Mixture  
**Intended/Recommended Use:** Engineered material adhesive

CYTEC INDUSTRIES INC., FIVE GARRET MOUNTAIN PLAZA, WOODLAND PARK, NEW JERSEY 07424, USA  
**For Product and all Non-Emergency Information call 1-800/652-6013. Outside the USA and Canada call 1-973/357-3193.**

**EMERGENCY PHONE (24 hours/day) - For emergency only involving spill, leak, fire, exposure or accident call:**

**Asia Pacific:**

Australia - +61-3-9663-2130 or 1800-033-111  
China (PRC) - +86 0532 83889090 (NRCC)  
New Guinea - +61-3-9663-2130  
New Zealand - +61-3-9663-2130 or 0800-734-607  
All Others - +65 3158 1074 (Carechem24 Singapore)

**Canada:** +1-905-356-8310 (Cytec Welland, Canada plant)

**Europe/Africa/Middle East (Carechem24 UK):**

Europe, Middle East, Africa, Israel - +44 (0) 1235 239 670  
Middle East, Africa (Arabic speaking countries) - +44 (0) 1235 239 671

**Latin America:**

Brazil - 0800 7077 022 (SUATRANS)  
Chile - +56-2-247-3600 (CITUC QUIMICO)  
All Others - +52-376-73 74122 (Cytec Atequiza, Mexico plant)

**USA:** +1-703-527-3887 or 1-800-424-9300 (CHEMTREC #CCN6083)

The ® indicates a Registered Trademark in the United States and the ™ indicates a trademark in the United States. The mark may also be registered, subject of an application for registration, or a trademark in other countries.

---

### 2. HAZARDS IDENTIFICATION

**GHS Classification**

Flammable Liquid Hazard Category 2  
Reproductive Toxicant Category 2  
Specific Target Organ Toxicity - Repeated Exposure Hazard Category 2  
Specific Target Organ Toxicity - Single Exposure Hazard Category 3  
Skin Corrosion / Irritation Hazard Category 2  
Aspiration Hazard Category 1  
Aquatic Environment Chronic Hazard Category 4

**LABEL ELEMENTS**



**Signal Word**

Danger

**Hazard Statements**

Highly flammable liquid and vapor  
 Suspected of damaging fertility or the unborn child  
 May cause damage to organs through prolonged or repeated exposure  
 May cause drowsiness or dizziness  
 Causes skin irritation  
 May be fatal if swallowed and enters airways  
 May cause long lasting harmful effects to aquatic life

**Precautionary Statements**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
 Ground/Bond container and receiving equipment.  
 Use explosion-proof electrical/ventilating/lighting/equipment.  
 Use only non-sparking tools.  
 Take precautionary measures against static discharge.  
 Wear protective gloves/protective clothing/eye protection/face protection.  
 Obtain special instructions before use.  
 Do not breathe dust/fume/gas/mist/vapours/spray.  
 Use only outdoors or in a well-ventilated area.  
 Wash face, hands and any exposed skin thoroughly after handling.  
 Avoid release to the environment.  
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
 In case of fire: Use CO2, dry chemical, or foam for extinction.  
 IF exposed or concerned: Get medical advice/attention.  
 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
 Call a POISON CENTER or doctor/physician if you feel unwell.  
 Specific treatment (see supplemental first aid instructions on this label).  
 If skin irritation occurs: Get medical advice/attention.  
 Take off all contaminated clothing and wash it before reuse.  
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
 Do NOT induce vomiting.  
 Store in a well-ventilated place. Keep cool.  
 Store locked up.  
 Store in a well-ventilated place. Keep container tightly closed.  
 Dispose of contents/container in accordance with local and national regulations.

**Hazards Not Otherwise Classified (HNOC), Other Hazards**

Not applicable

**3. COMPOSITION/INFORMATION ON INGREDIENTS****HAZARDOUS INGREDIENTS**

Component / CAS No.	%	GHS Classification	Carcinogen
Toluene 108-88-3	30 - 60	Flam. Liq. 2 (H225) Repr. 2 (H361d) STOT RE 2 (H373) STOT SE 3 (H336) Skin Irrit. 2 (H315) Eye Irrit. 2B (H320) Asp. Tox. 1 (H304)	-
Modified siloxane/silicone resin 68440-70-0	30 - 60	Aquatic Chronic 4 (H413)	-

Component / CAS No.	%	GHS Classification	Carcinogen
Octamethylcyclotetrasiloxane 556-67-2	< 10	Repr. 2 (H361f) Skin Irrit. 3 (H316) Eye Irrit. 2B (H320) Aquatic Chronic 4 (H413)	-

The specific chemical identity and/or exact percentage of composition for one or more ingredients has been withheld as a trade secret.

Additional GHS classification or other information may be included in this section but has not been adopted by OSHA. See Section 16 for full text of H phrases.

---

## 4. FIRST AID MEASURES

### DESCRIPTION OF FIRST AID MEASURES

**Eye Contact:**

Rinse immediately with plenty of water for at least 15 minutes. Obtain medical advice if there are persistent symptoms.

**Skin Contact:**

Remove contaminated clothing and shoes without delay. Wash immediately with plenty of water. Do not reuse contaminated clothing without laundering. Get medical attention if pain or irritation persists after washing or if signs and symptoms of overexposure appear.

**Ingestion:**

If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

**Inhalation:**

Remove to fresh air. If breathing is difficult, give oxygen. Obtain medical advice if there are persistent symptoms.

### MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

None known

### INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDS

**Notes To Physician:**

Formaldehyde is not a component of this product, however, heating to temperatures above 150 C in the presence of air may result in the release of formaldehyde. The International Agency for Research on Cancer (IARC) has classified formaldehyde as a Group 1 (known) human carcinogen. Formaldehyde is irritating to the eyes, nose, throat and skin and is a dermal sensitizer.

---

## 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media:**

Use water spray, alcohol foam, carbon dioxide or dry chemical to extinguish fires. Water stream may be ineffective.

**Extinguishing Media to Avoid:**

full water jet

**Protective Equipment:**

Firefighters, and others exposed, wear self-contained breathing apparatus. Wear full firefighting protective clothing. See MSDS Section 8 (Exposure Controls/Personal Protection).

**Special Hazards:**

Keep containers cool by spraying with water if exposed to fire.

---

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions:

Where exposure level is known, wear approved respirator suitable for level of exposure. Where exposure level is not known, wear approved, positive pressure, self-contained respirator. In addition to the protective clothing/equipment in Section 8 (Exposure Controls/Personal Protection), wear impermeable boots.

### Methods For Cleaning Up:

Remove sources of ignition. Cover spills with some inert absorbent material; sweep up and place in a waste disposal container. Flush spill area with water.

### References to other sections:

See Sections 8 and 13 for additional information.

---

## 7. HANDLING AND STORAGE

### HANDLING

**Precautions:** Keep away from heat, sparks and open flame. - No smoking. Keep container tightly closed. Ground/Bond container and receiving equipment. Use explosion-proof electrical, ventilating, lighting and other equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves and eye/face protection. Wash hands thoroughly after handling. Avoid release to the environment. Use only outdoors or in a well-ventilated area. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe vapors or spray mist.

**Special Handling Statements:** Heating to temperatures above 150 C (302 F) in the presence of air may result in the release of formaldehyde. Formaldehyde is a known animal carcinogen and is considered to be probably carcinogenic to humans by the International Agency for Research on Cancer and the National Toxicology Program. Formaldehyde is irritating to the eyes, nose, throat and skin and is a dermal sensitizer. The permissible exposure limit for formaldehyde should not be exceeded. Containers must be bonded and grounded when pouring or transferring material.

### STORAGE

Areas containing this material should have fire safe practices and electrical equipment in accordance with applicable regulations and/or guidelines. Standards are primarily based on the material's flashpoint, but may also take into account properties such as miscibility with water or toxicity. All local and national regulations should be followed. In the Americas, National Fire Protection Association (NFPA) 30: Flammable and Combustible Liquids Code, is a widely used standard. NFPA 30 establishes storage conditions for the following classes of materials: Class I Flammable Liquids, Flashpoint <37.8 °C. Class II Combustible Liquids, 37.8 °C < Flashpoint <60 °C. Class IIIa Combustible Liquids, 60 °C < Flashpoint < 93 °C. Class IIIb Combustible Liquids, Flashpoint > 93 °C.

**Storage Temperature:** Store at <29 °C 85 °F

**Reason:** Quality.

---

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Engineering Measures:

Where this material is not used in a closed system, good enclosure and local exhaust ventilation should be provided to control exposure.

### Respiratory Protection:

Where exposures are below the established exposure limit, no respiratory protection is required. Where exposures exceed the established exposure limit, use respiratory protection recommended for the material and level of exposure.

### Eye Protection:

Wear eye/face protection such as chemical splash proof goggles or face shield. Provide eye wash fountain and safety shower in close proximity to points of potential exposure.

**Skin Protection:**

Avoid skin contact. Wear impermeable gloves and suitable protective clothing. Since this product is absorbed through the skin, care must be taken to prevent skin contact and contamination of clothing.

**Hand Protection:**

Wear impermeable gloves. Consider the porosity and elasticity data of the glove manufacturer and the specific conditions in the work place.

**Additional Advice:**

Food, beverages, and tobacco products should not be carried, stored, or consumed where this material is in use. Before eating, drinking, or smoking, wash face and hands thoroughly with soap and water. It is recommended that a shower be taken after completion of workshift especially if significant contact has occurred. Work clothing should then be laundered prior to reuse. Street clothing should be stored separately from work clothing and protective equipment. Work clothing and shoes should not be taken home.

---

**Exposure Limit(s)**

108-88-3	Toluene	
OSHA (PEL):		200 ppm (TWA) 300 ppm (Ceiling)
ACGIH (TLV):		20 ppm (TWA)
Other Value:		Not established

---

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Color:</b>	clear
<b>Appearance:</b>	liquid
<b>Odor:</b>	aromatic
<b>Boiling Point:</b>	111 °C    232 °F (value for toluene)
<b>Melting Point:</b>	Not applicable
<b>Vapor Pressure:</b>	22mm Hg @ 20 °C
<b>Specific Gravity/Density:</b>	0.99
<b>Vapor Density:</b>	3.2
<b>Percent Volatile (% by wt.):</b>	45(by volume)
<b>pH:</b>	Not available
<b>Saturation In Air (% By Vol.):</b>	Not available
<b>Evaporation Rate:</b>	1.9
<b>Solubility In Water:</b>	negligible
<b>Volatile Organic Content:</b>	435 gm/L
<b>Flash Point:</b>	2 °C    35 °F    Tag Closed Cup
<b>Flammable Limits (% By Vol):</b>	Lower: 1.2    Upper: 7.0
<b>Autoignition (Self) Temperature:</b>	Not applicable
<b>Decomposition Temperature:</b>	Not applicable
<b>Partition coefficient (n-octanol/water):</b>	Not available
<b>Odor Threshold:</b>	Not available
<b>Viscosity (Kinematic):</b>	Cannot be measured at 40°C due to Flash point

---

**10. STABILITY AND REACTIVITY**

<b>Stability:</b>	Stable
<b>Conditions To Avoid:</b>	Keep away from heat, spark and flame.
<b>Polymerization:</b>	Will not occur

<b>Conditions To Avoid:</b>	None known
<b>Materials To Avoid:</b>	Strong oxidizing agents. Concentrated nitric acid, sulfuric acid, halogen and molten sulfur
<b>Hazardous Decomposition Products:</b>	Carbon dioxide Carbon monoxide (CO) Formaldehyde

---

## 11. TOXICOLOGICAL INFORMATION

### PRODUCT TOXICITY INFORMATION

**Likely Routes of Exposure:** Skin, Eyes, Oral.

#### ACUTE TOXICITY DATA

oral	rat	Acute LD50	>2000 mg/kg
dermal	rabbit	Acute LD50	>2000 mg/kg
inhalation	rat	Acute LC50 4 hr	>5 mg/l (Dust/Mist)

#### LOCAL EFFECTS ON SKIN AND EYE

Acute Irritation	skin	Irritating
Acute Irritation	eye	No data

#### ALLERGIC SENSITIZATION

Sensitization	skin	Not sensitizing
Sensitization	respiratory	Not sensitizing

#### GENOTOXICITY

##### Assays for Gene Mutations

Ames Salmonella Assay	No data
-----------------------	---------

#### OTHER INFORMATION

The product toxicity information above has been estimated.

#### HAZARDOUS INGREDIENT TOXICITY DATA

Toluene has acute oral (rat) and dermal (rabbit) LD50 values of 4,328 mg/kg and 12124 mg/kg, respectively. The acute 4-hour inhalation (rat, female) LC50 value is 5,060 ppm (19.07 mg/L). Toluene is a severe eye and moderate skin irritant. Inhalation overexposure to toluene vapor can cause headache, fatigue, nausea, and central nervous system depression. Sustained inhalation of high levels of toluene has been shown to cause reversible kidney and liver damage. Subchronic inhalation of toluene vapors have caused permanent hearing loss, decreased learning capabilities and damage to the eyes in laboratory animal tests. Deliberate inhalation of high concentrations of toluene vapor by pregnant women has been shown to adversely affect the fetus. These fetotoxic effects include intrauterine growth retardation and delayed postnatal development. The fetotoxic effects of toluene seen in laboratory animals are similar to those seen in humans. Ingestion of toluene in laboratory animals caused mild gastritis and harmful effects on the respiratory system, kidneys, liver and heart. Ingestion in laboratory animals also caused harmful effects on the central nervous system and death. It has also been reported that subchronic ingestion of toluene caused brain and bladder damage in laboratory animals. Due to synergistic effects, the toxicity of toluene may be enhanced by exposure to n-hexane, benzene, xylene, acetylsalicylic acid and chlorinated hydrocarbons. The literature reports that toluene is an aspiration hazard, that acute oral exposure resulted in reversible visual dysfunction, and that chronic exposure has caused altered immune function in animals. Toluene is a chemical known to the State of California to cause reproductive toxicity.

Octamethylcyclotetrasiloxane has an acute oral (rat) and dermal (rabbit) LD50 values of 1,540 mg/kg and 794 mg/kg, respectively. This material may cause mild eye and skin irritation.

California Proposition 65 Warning (applicable in California only) - This product contains (a) chemical(s) known to the State of California to cause cancer and birth defects or other reproductive harm.

## 12. ECOLOGICAL INFORMATION

### TOXICITY, PERSISTENCE AND DEGRADABILITY, BIOACCUMULATIVE POTENTIAL, MOBILITY IN SOIL, OTHER ADVERSE EFFECTS

**Overall Environmental Toxicity:** May cause long lasting harmful effects to aquatic life.

The ecological assessment for this material is based on an evaluation of its components.

### RESULTS OF PBT AND vPvB ASSESSMENT

Not determined

### HAZARDOUS INGREDIENT TOXICITY DATA

Component / CAS No.	Toxicity to Algae	Toxicity to Fish	Toxicity to Water Flea
Toluene 108-88-3	EC50 > 433 mg/L - Pseudokirchneriella subcapitata (96h) EC50 = 12.5 mg/L - Pseudokirchneriella subcapitata (72h)	LC50 = 12.6 mg/L - Pimephales promelas (96h) LC50 = 28.2 mg/L - Poecilia reticulata (96h) LC50 11.0 - 15.0 mg/L - Lepomis macrochirus (96h) LC50 = 54 mg/L - Oryzias latipes (96h) LC50 5.89 - 7.81 mg/L - Oncorhynchus mykiss (96h) LC50 = 5.8 mg/L - Oncorhynchus mykiss (96h) LC50 15.22 - 19.05 mg/L - Pimephales promelas (96h) LC50 50.87 - 70.34 mg/L - Poecilia reticulata (96h) LC50 14.1 - 17.16 mg/L - Oncorhynchus mykiss (96h)	EC50 5.46 - 9.83 mg/L - Daphnia magna (48h) EC50 = 11.5 mg/L - Daphnia magna (48h)
Modified siloxane/silicone resin 68440-70-0	Not available	Not available	Not available
Octamethylcyclotetrasiloxane 556-67-2	Not available	LC50 > 500 mg/L - Brachydanio rerio (96h) LC50 > 1000 mg/L - Lepomis macrochirus (96h)	Not available

## 13. DISPOSAL CONSIDERATIONS

The information on RCRA waste classification and disposal methodology provided below applies only to the product, as supplied. If the material has been altered or contaminated, or it has exceeded its recommended shelf life, the guidance may be inapplicable. Hazardous waste classification under federal regulations (40 CFR Part 261 et seq) is dependent upon whether a material is a RCRA "listed hazardous waste" or has any of the four RCRA "hazardous waste characteristics." Refer to 40 CFR Part 261.33 to determine if a given material to be disposed of is a RCRA "listed hazardous waste"; information contained in Section 15 of this MSDS is not intended to indicate if the product is a "listed hazardous waste." RCRA Hazardous Waste Characteristics: There are four characteristics defined in 40 CFR Section 261.21-61.24: Ignitability, Corrosivity, Reactivity, and Toxicity. To determine Ignitability, see Section 9 of this MSDS (flash point). For Corrosivity, see Sections 9 and 14 (pH and DOT corrosivity). For Reactivity, see Section 10 (incompatible materials). For Toxicity, see Section 3 (composition). Federal regulations are subject to change. State and local requirements, which may differ from or be more stringent than the federal regulations, may also apply to the classification of the material if it is to be disposed. The Company encourages the recycle, recovery and reuse of materials, where permitted, as an alternate to disposal as a waste. The Company recommends that organic materials classified as RCRA hazardous wastes be disposed of by thermal treatment or incineration at EPA approved facilities. The Company has provided the foregoing for information only; the person generating the waste is responsible for determining the waste classification and disposal method.

---

## 14. TRANSPORT INFORMATION

This section provides basic shipping classification information. Refer to appropriate transportation regulations for specific requirements.

### US DOT

Dangerous Goods? X  
Proper Shipping Name: Adhesives  
Hazard Class: 3  
Packing Group: II  
UN/ID Number: UN1133  
Transport Label Required: Flammable Liquid

<u>Component / CAS No.</u>	<u>Hazardous Substances / Reportable Quantity of Product (lbs)</u>
Benzene	11111
Toluene	1666

Comments: Hazardous Substances/Reportable Quantities - DOT requirements specific to Hazardous Substances only apply if the quantity in one package equals or exceeds the product reportable quantity.

### TRANSPORT CANADA

Dangerous Goods? X  
Proper Shipping Name: Adhesives  
Hazard Class: 3  
Packing Group: II  
UN Number: UN1133  
Transport Label Required: Flammable Liquid

### ICAO / IATA

Dangerous Goods? X  
Proper Shipping Name: Adhesives  
Hazard Class: 3  
Packing Group: II  
UN Number: UN1133  
Transport Label Required: Flammable Liquid

### IMO



Dangerous Goods? X

Proper Shipping Name: Adhesives

Hazard Class: 3

UN Number: UN1133

Packing Group: II

Transport Label Required: Flammable Liquid

## 15. REGULATORY INFORMATION

### Inventory Information

**United States (USA):** All components of this product are included on the TSCA Chemical Inventory or are not required to be listed on the TSCA Chemical Inventory.

This product contains a chemical substance that is subject to export notification under Section 12 (b) of the Toxic Substances Control Act, 15 U. S. C. 2601 et. seq. (This requirement applies to exports from the United States only.)

**Canada:** All components of this product are included on the Domestic Substances List (DSL) or are not required to be listed on the DSL.

**Australia:** All components of this product are included in the Australian Inventory of Chemical Substances (AICS) or are not required to be listed on AICS.

**China:** All components of this product are included on the Chinese inventory or are not required to be listed on the Chinese inventory.

**Japan:** One or more components of this product are NOT included on the Japanese (ENCS) inventory.

**Korea:** All components of this product are included on the Korean (ECL) inventory or are not required to be listed on the Korean inventory.

**Philippines:** All components of this product are included on the Philippine (PICCS) inventory or are not required to be listed on the Philippine inventory.

### OTHER ENVIRONMENTAL INFORMATION

The following components of this product may be subject to reporting requirements pursuant to Section 313 of CERCLA (40 CFR 372), Section 12(b) of TSCA, or may be subject to release reporting requirements (40 CFR 307, 40 CFR 311, etc.) See Section 13 for information on waste classification and waste disposal of this product.

Component / CAS No.	%	TPQ (lbs)	RQ(lbs)	S313	TSCA 12B
Octamethylcyclotetrasiloxane 556-67-2	< 10	None	0	No	Yes
Toluene 108-88-3	30 - 60	None	1000	Yes	No

### PRODUCT HAZARD CLASSIFICATION UNDER SECTION 311 OF SARA

- Acute
- Chronic
- Fire

## 16. OTHER INFORMATION

### NFPA Hazard Rating (National Fire Protection Association)

## 16. OTHER INFORMATION

Health: 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

Fire: 3 - Liquids and solids that can be ignited under almost all ambient temperature conditions.

Instability: 0 - Materials that in themselves are normally stable, even under fire exposure conditions.

**Reasons For Issue:** Revised Section 2  
Revised Section 15  
Revised Section 16

**Date Prepared:** 04/23/2014

**Date of last significant revision:** 04/23/2014

### Component Hazard Phrases

#### Toluene

- H225 - Highly flammable liquid and vapor.
- H304 - May be fatal if swallowed and enters airways.
- H315 - Causes skin irritation.
- H320 - Causes eye irritation.
- H336 - May cause drowsiness or dizziness.
- H373 - May cause damage to organs through prolonged or repeated exposure.
- H361d - Suspected of damaging the unborn child.

#### Modified siloxane/silicone resin

- H413 - May cause long lasting harmful effects to aquatic life.

#### Octamethylcyclotetrasiloxane

- H413 - May cause long lasting harmful effects to aquatic life.
- H316 - Causes mild skin irritation.
- H320 - Causes eye irritation.
- H361f - Suspected of damaging fertility.

---

Prepared By: Legal & Compliance Services; E-mail: [custinfo@cytec.com](mailto:custinfo@cytec.com)

---

This information is given without any warranty or representation. We do not assume any legal responsibility for same, nor do we give permission, inducement, or recommendation to practice any patented invention without a license. It is offered solely for your consideration, investigation, and verification. Before using any product, read its label.

---

## SAFETY DATA SHEET

---

### 1. IDENTIFICATION

**Product Name:** DAPCO™ 3301 Silicone Adhesive, Part B  
**Synonyms:** None  
**Chemical Family:** Silane in Isopropyl Alcohol  
**Molecular Formula:** Mixture  
**Molecular Weight:** Mixture  
**Intended/Recommended Use:** Engineered material adhesive

CYTEC INDUSTRIES INC., FIVE GARRET MOUNTAIN PLAZA, WOODLAND PARK, NEW JERSEY 07424, USA  
**For Product and all Non-Emergency Information call 1-800/652-6013. Outside the USA and Canada call 1-973/357-3193.**

**EMERGENCY PHONE (24 hours/day) - For emergency only involving spill, leak, fire, exposure or accident call:**

**Asia Pacific:**

Australia - +61-3-9663-2130 or 1800-033-111  
China (PRC) - +86 0532 83889090 (NRCC)  
New Guinea - +61-3-9663-2130  
New Zealand - +61-3-9663-2130 or 0800-734-607  
All Others - +65 3158 1074 (Carechem24 Singapore)

**Canada:** +1-905-356-8310 (Cytec Welland, Canada plant)

**Europe/Africa/Middle East (Carechem24 UK):**

Europe, Middle East, Africa, Israel - +44 (0) 1235 239 670  
Middle East, Africa (Arabic speaking countries) - +44 (0) 1235 239 671

**Latin America:**

Brazil - 0800 7077 022 (SUATRANS)  
Chile - +56-2-247-3600 (CITUC QUIMICO)  
All Others - +52-376-73 74122 (Cytec Atequiza, Mexico plant)

**USA:** +1-703-527-3887 or 1-800-424-9300 (CHEMTREC #CCN6083)

The ® indicates a Registered Trademark in the United States and the ™ indicates a trademark in the United States. The mark may also be registered, subject of an application for registration, or a trademark in other countries.

---

### 2. HAZARDS IDENTIFICATION

**GHS Classification**

Flammable Liquid Hazard Category 2  
Acute Toxicity (Oral) Hazard Category 4  
Specific Target Organ Toxicity - Single Exposure Hazard Category 3  
Serious Eye Damage / Eye Irritation Hazard Category 1  
Skin Corrosion / Irritation Hazard Category 1B  
Skin Sensitizer Hazard Category 1B

**LABEL ELEMENTS**



**Signal Word**

Danger

**Hazard Statements**

Highly flammable liquid and vapor  
 Harmful if swallowed  
 May cause drowsiness or dizziness  
 May cause respiratory irritation  
 Causes severe skin burns and eye damage  
 May cause an allergic skin reaction

**Precautionary Statements**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
 Ground/Bond container and receiving equipment.  
 Use explosion-proof electrical/ventilating/lighting/equipment.  
 Use only non-sparking tools.  
 Take precautionary measures against static discharge.  
 Wear protective gloves/protective clothing/eye protection/face protection.  
 Wash face, hands and any exposed skin thoroughly after handling.  
 Do not eat, drink or smoke when using this product.  
 Use only outdoors or in a well-ventilated area.  
 Do not breathe dust/fume/gas/mist/vapours/spray.  
 Contaminated work clothing should not be allowed out of the workplace.  
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
 In case of fire: Use CO2, dry chemical, or foam for extinction.  
 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
 Wash contaminated clothing before reuse.  
 Immediately call a POISON CENTER or doctor/physician.  
 Specific treatment (see supplemental first aid instructions on this label).  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 Store in a well-ventilated place. Keep cool.  
 Store in a well-ventilated place. Keep container tightly closed.  
 Store locked up.  
 Dispose of contents/container in accordance with local and national regulations.

**Hazards Not Otherwise Classified (HNOC), Other Hazards**

Not applicable

**3. COMPOSITION/INFORMATION ON INGREDIENTS****HAZARDOUS INGREDIENTS**

Component / CAS No.	%	GHS Classification	Carcinogen
gamma-Aminopropyltriethoxy silane 919-30-2	20.0 - 40.0	Acute Tox. 4 (H302) Skin Corr. 1B (H314) Eye Dam. 1 (H318) Skin Sens. 1B (H317)	-
Isopropanol 67-63-0	60.0 - 80.0	Flam. Liq. 2 (H225) STOT SE 3 (H336) Skin Irrit. 3 (H316) Eye Irrit. 2A (H319)	Not applicable

Additional GHS classification or other information may be included in this section but has not been adopted by OSHA.  
 See Section 16 for full text of H phrases.

---

## 4. FIRST AID MEASURES

### DESCRIPTION OF FIRST AID MEASURES

**Eye Contact:**

Rinse immediately with plenty of water for at least 15 minutes. Obtain medical attention immediately.

**Skin Contact:**

Take off immediately all contaminated clothing. Wear impermeable gloves. Wash immediately with plenty of water and soap. Pay particular attention to skin crevices, nail folds, etc. Do not reuse contaminated clothing without laundering. Do not reuse contaminated leatherware.

**Ingestion:**

If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

**Inhalation:**

Remove to fresh air. If breathing is difficult, give oxygen. Obtain medical advice if there are persistent symptoms.

### MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

None known

### INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDS

Not applicable

---

## 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media:**

Use water spray, alcohol foam, carbon dioxide or dry chemical to extinguish fires. Water stream may be ineffective.

**Extinguishing Media to Avoid:**

full water jet

**Protective Equipment:**

Firefighters, and others exposed, wear self-contained breathing apparatus. Wear full firefighting protective clothing. See MSDS Section 8 (Exposure Controls/Personal Protection).

**Special Hazards:**

Keep containers cool by spraying with water if exposed to fire.

---

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions:**

Where exposure level is known, wear approved respirator suitable for level of exposure. Where exposure level is not known, wear approved, positive pressure, self-contained respirator. In addition to the protective clothing/equipment in Section 8 (Exposure Controls/Personal Protection), wear impermeable boots.

**Methods For Cleaning Up:**

Remove sources of ignition. Cover spills with some inert absorbent material; sweep up and place in a waste disposal container. Flush spill area with water.

**References to other sections:**

See Sections 8 and 13 for additional information.

---

## 7. HANDLING AND STORAGE

### HANDLING

**Precautions:** Keep away from heat, sparks and open flame. - No smoking. Keep container tightly closed. Ground/Bond container and receiving equipment. Use explosion-proof electrical, ventilating, lighting and other equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/clothing and eye/face protection. Use only outdoors or in a well-ventilated area. Do not breathe vapors or spray mist.

**Special Handling Statements:** Containers must be bonded and grounded when pouring or transferring material.

### STORAGE

Areas containing this material should have fire safe practices and electrical equipment in accordance with applicable regulations and/or guidelines. Standards are primarily based on the material's flashpoint, but may also take into account properties such as miscibility with water or toxicity. All local and national regulations should be followed.

In the Americas, National Fire Protection Association (NFPA) 30: Flammable and Combustible Liquids Code, is a widely used standard. NFPA 30 establishes storage conditions for the following classes of materials: Class I Flammable Liquids, Flashpoint <37.8 °C. Class II Combustible Liquids, 37.8 °C < Flashpoint <60 °C. Class IIIa Combustible Liquids, 60 °C < Flashpoint < 93 °C. Class IIIb Combustible Liquids, Flashpoint > 93 °C.

**Storage Temperature:** Store at 27 °C 80 °F

**Reason:** Quality.

---

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Engineering Measures:

Utilize a closed system process where feasible. Where this material is not used in a closed system, good enclosure and local exhaust ventilation should be provided to control exposure.

### Respiratory Protection:

Where exposures are below the established exposure limit, no respiratory protection is required. Where exposures exceed the established exposure limit, use respiratory protection recommended for the material and level of exposure.

### Eye Protection:

Prevent eye and skin contact. Provide eye wash fountain and safety shower in close proximity to points of potential exposure. Wear eye/face protection such as chemical splash proof goggles or face shield.

### Skin Protection:

Prevent contamination of skin or clothing when removing protective equipment. Wear impermeable gloves and suitable protective clothing.

### Hand Protection:

Wear impermeable gloves. Consider the porosity and elasticity data of the glove manufacturer and the specific conditions in the work place.

### Additional Advice:

Food, beverages, and tobacco products should not be carried, stored, or consumed where this material is in use. Before eating, drinking, or smoking, wash face and hands thoroughly with soap and water.

---

## Exposure Limit(s)

67-63-0	Isopropanol	
OSHA (PEL):		400 ppm (TWA) 980 mg/m <sup>3</sup> (TWA)
ACGIH (TLV):		400 ppm (STEL) 200 ppm (TWA)
Other Value:		Not established

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Color:</b>	clear
<b>Appearance:</b>	liquid
<b>Odor:</b>	amine
<b>Boiling Point:</b>	82 °C      180 °F (value for isopropyl alcohol)
<b>Melting Point:</b>	Not applicable
<b>Vapor Pressure:</b>	>10mm Hg @ 20 °C
<b>Specific Gravity/Density:</b>	0.8 - 0.9
<b>Vapor Density:</b>	2(value for isopropyl alcohol)
<b>Percent Volatile (% by wt.):</b>	70
<b>pH:</b>	Not applicable
<b>Saturation In Air (% By Vol.):</b>	Not available
<b>Evaporation Rate:</b>	2.6(value for isopropyl alcohol)
<b>Solubility In Water:</b>	Reacts with water
<b>Volatile Organic Content:</b>	820 gm/L
<b>Flash Point:</b>	12 °C      53 °F (value for isopropyl alcohol) Closed Cup
<b>Flammable Limits (% By Vol):</b>	Lower: 2.0      Upper: 12.0
<b>Autoignition (Self) Temperature:</b>	399 °C      750 °F
<b>Decomposition Temperature:</b>	Not available
<b>Partition coefficient (n-octanol/water):</b>	Not applicable
<b>Odor Threshold:</b>	Not available
<b>Viscosity (Kinematic):</b>	Not applicable

---

## 10. STABILITY AND REACTIVITY

<b>Stability:</b>	Stable
<b>Conditions To Avoid:</b>	Do not store in aluminum containers.
<b>Polymerization:</b>	Will not occur
<b>Conditions To Avoid:</b>	None known
<b>Materials To Avoid:</b>	Strong acids, bases, oxidizing agents. acetaldehydes Isocyanates
<b>Hazardous Decomposition Products:</b>	Carbon monoxide (CO) Carbon dioxide silicon dioxide ethanol

---

## 11. TOXICOLOGICAL INFORMATION

### PRODUCT TOXICITY INFORMATION

**Likely Routes of Exposure:** Skin, Eyes, Oral.

### ACUTE TOXICITY DATA

oral	rat	Acute LD50	1250 mg/kg
dermal	rabbit	Acute LD50	>2000 mg/kg
inhalation	rat	Acute LC50 4 hr	No data

**LOCAL EFFECTS ON SKIN AND EYE**

Acute Irritation	dermal	Corrosive
Acute Irritation	eye	Causes serious damage

**ALLERGIC SENSITIZATION**

Sensitization	dermal	No data
Sensitization	inhalation	No data

**GENOTOXICITY****Assays for Gene Mutations**

Ames Salmonella Assay	No data
-----------------------	---------

**OTHER INFORMATION**

The product toxicity information above has been estimated.

**HAZARDOUS INGREDIENT TOXICITY DATA**

gamma-Aminopropyltriethoxy silane has acute oral (rat) LD50 values of 1492 mg/kg (females) and 2689 mg/kg for (males). The acute dermal (rabbit) LD50 is 4076 mg/kg. Direct contact with this material may cause burns of eyes and skin. Inhalation of vapors can cause irritation of the eyes and upper respiratory tract. This substance produced allergic skin reaction in guinea pigs. Ingestion of gamma-Aminopropyltriethoxy silane can cause damage to the gastrointestinal tract, liver, and kidneys. Absorption of this material caused kidney damage in laboratory animals.

Isopropanol has acute oral (rat) and dermal (rabbit) LD50 values of 5.0 g/kg and 12.8 g/kg, respectively. The 4-hour inhalation LC50 (rat) for isopropanol is >16,000 ppm (40.86 mg/L). Acute overexposure to isopropanol vapor may cause mild irritation of the eyes and respiratory tract. Chronic overexposure to isopropanol vapors may cause central nervous system depression, headaches, dizziness, nausea, and staggered gait. Liquid isopropanol may cause moderate to severe eye irritation. In laboratory animals studies, isopropanol has produced fetotoxic effects at levels that were maternally toxic and developmental effects at levels that were maternally non-toxic, and inhalation exposures that produced reduced fetal weight at non-maternally toxic levels. Literature reports chronic exposure has caused kidney problems and testicular effects in laboratory animals.

**12. ECOLOGICAL INFORMATION****TOXICITY, PERSISTENCE AND DEGRADABILITY, BIOACCUMULATIVE POTENTIAL, MOBILITY IN SOIL, OTHER ADVERSE EFFECTS**

This material is not classified as dangerous for the environment.  
The ecological assessment for this material is based on an evaluation of its components.



**RESULTS OF PBT AND vPvB ASSESSMENT**

Not determined

**HAZARDOUS INGREDIENT TOXICITY DATA**

Component / CAS No.	Toxicity to Algae	Toxicity to Fish	Toxicity to Water Flea
gamma-Aminopropyltriethoxy silane 919-30-2	Not available	Not available	Not available
Isopropanol 67-63-0	EC50 > 1000 mg/L - Desmodesmus subspicatus (72h) EC50 > 1000 mg/L - Desmodesmus subspicatus (96h)	LC50 = 11130 mg/L - Pimephales promelas (96h) LC50 = 9640 mg/L - Pimephales promelas (96h) LC50 > 1400000 µg/L - Lepomis macrochirus (96h)	EC50 = 13299 mg/L - Daphnia magna (48h)

**13. DISPOSAL CONSIDERATIONS**

The information on RCRA waste classification and disposal methodology provided below applies only to the product, as supplied. If the material has been altered or contaminated, or it has exceeded its recommended shelf life, the guidance may be inapplicable. Hazardous waste classification under federal regulations (40 CFR Part 261 et seq) is dependent upon whether a material is a RCRA "listed hazardous waste" or has any of the four RCRA "hazardous waste characteristics." Refer to 40 CFR Part 261.33 to determine if a given material to be disposed of is a RCRA "listed hazardous waste"; information contained in Section 15 of this MSDS is not intended to indicate if the product is a "listed hazardous waste." RCRA Hazardous Waste Characteristics: There are four characteristics defined in 40 CFR Section 261.21-61.24: Ignitability, Corrosivity, Reactivity, and Toxicity. To determine Ignitability, see Section 9 of this MSDS (flash point). For Corrosivity, see Sections 9 and 14 (pH and DOT corrosivity). For Reactivity, see Section 10 (incompatible materials). For Toxicity, see Section 3 (composition). Federal regulations are subject to change. State and local requirements, which may differ from or be more stringent than the federal regulations, may also apply to the classification of the material if it is to be disposed. The Company encourages the recycle, recovery and reuse of materials, where permitted, as an alternate to disposal as a waste. The Company recommends that organic materials classified as RCRA hazardous wastes be disposed of by thermal treatment or incineration at EPA approved facilities. The Company has provided the foregoing for information only; the person generating the waste is responsible for determining the waste classification and disposal method.

**14. TRANSPORT INFORMATION**

This section provides basic shipping classification information. Refer to appropriate transportation regulations for specific requirements.

**US DOT**

Dangerous Goods? X

Proper Shipping Name: Flammable liquid, corrosive, n.o.s.

Hazard Class: 3

Subsidiary Class: 8

Packing Group: II

UN/ID Number: UN2924

Transport Label Required: Flammable Liquid  
Corrosive

Technical Name (N.O.S.): Isopropanol, gamma-aminopropyltriethoxy silane

**TRANSPORT CANADA**

Dangerous Goods? X

Proper Shipping Name: Flammable liquid, corrosive, n.o.s.

Hazard Class: 3

Subsidiary Class: 8

Packing Group: II

UN Number: UN2924

Transport Label Required: Flammable Liquid  
Corrosive

Technical Name (N.O.S.): Isopropanol, gamma-aminopropyltriethoxy silane

**ICAO / IATA**

Dangerous Goods? X

Proper Shipping Name: Flammable liquid, corrosive, n.o.s.

Hazard Class: 3

Subsidiary Class: 8

Packing Group: II

UN Number: UN2924

Transport Label Required: Flammable Liquid  
Corrosive

Technical Name (N.O.S.): Isopropanol, gamma-aminopropyltriethoxy silane

**IMO**

Dangerous Goods? X

Proper Shipping Name: Flammable liquid, corrosive, n.o.s.

Hazard Class: 3

Subsidiary Class: 8

UN Number: UN2924

Packing Group: II

Transport Label Required: Flammable Liquid  
Corrosive

Technical Name (N.O.S.): Isopropanol, gamma-aminopropyltriethoxy silane

---

**15. REGULATORY INFORMATION****Inventory Information**

**United States (USA):** All components of this product are included on the TSCA Chemical Inventory or are not required to be listed on the TSCA Chemical Inventory.

**Canada:** All components of this product are included on the Domestic Substances List (DSL) or are not required to be listed on the DSL.

**European Economic Area (including EU):** Cytec has appointed an Only Representative to relieve our customers from their registration requirements under the REACH Regulation (EC) No. 1907/2006. Please contact us if you wish to benefit from the OR arrangement.

**Australia:** All components of this product are included in the Australian Inventory of Chemical Substances (AICS) or are not required to be listed on AICS.

**China:** All components of this product are included on the Chinese inventory or are not required to be listed on the Chinese inventory.

**Japan:** All components of this product are included on the Japanese (ENCS) inventory or are not required to be listed on the Japanese inventory.

**Korea:** All components of this product are included on the Korean (ECL) inventory or are not required to be listed on the Korean inventory.

**Philippines:** All components of this product are included on the Philippine (PICCS) inventory or are not required to be listed on the Philippine inventory.

#### **OTHER ENVIRONMENTAL INFORMATION**

The following components of this product may be subject to reporting requirements pursuant to Section 313 of CERCLA (40 CFR 372), Section 12(b) of TSCA, or may be subject to release reporting requirements (40 CFR 307, 40 CFR 311, etc.) See Section 13 for information on waste classification and waste disposal of this product.

This product does not contain any components regulated under these sections of the EPA

#### **PRODUCT HAZARD CLASSIFICATION UNDER SECTION 311 OF SARA**

- Acute
- Fire

---

## **16. OTHER INFORMATION**

#### **NFPA Hazard Rating (National Fire Protection Association)**

Health: 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

Fire: 3 - Liquids and solids that can be ignited under almost all ambient temperature conditions.

Instability: 0 - Materials that in themselves are normally stable, even under fire exposure conditions.

**Reasons For Issue:** Revised Section 14

**Date Prepared:** 05/14/2014

**Date of last significant revision:** 05/14/2014

#### **Component Hazard Phrases**

gamma-Aminopropyltriethoxy silane

H302 - Harmful if swallowed.

H314 - Causes severe skin burns and eye damage.

H317 - May cause an allergic skin reaction.

Isopropanol

H225 - Highly flammable liquid and vapor.

H316 - Causes mild skin irritation.

H319 - Causes serious eye irritation.

H336 - May cause drowsiness or dizziness.

---

Prepared By: Legal & Compliance Services; E-mail: [custinfo@cytec.com](mailto:custinfo@cytec.com)

---

This information is given without any warranty or representation. We do not assume any legal responsibility for same, nor do we give permission, inducement, or recommendation to practice any patented invention without a license. It is offered solely for your consideration, investigation, and verification. Before using any product, read its label.

---