



SDS: 0008597
Date Prepared: 02/19/2016

SAFETY DATA SHEET

1. IDENTIFICATION

Product Name: DAPCO™ 3302 Silicone Adhesive, Part A
Product Description: Silicone in toluene
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 (IXOM)
China (PRC) - +86 0532 83889090 (NRCC)
New Guinea - +61-3-9663-2130 or 1800-033-111
New Zealand - +61-3-9663-2130 or 0800-734-607 (IXOM)
India, Japan, Korea, Malaysia, Thailand - +65 3158 1074 (Carechem24 Singapore)
India (Hindi Speaking Only) - +65 3158 1198 or 000800 100 7479 (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
(Arabic speaking countries) - +44 (0) 1235 239 671

Latin America:

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

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

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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
May cause respiratory irritation
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
Modified siloxane/silicone resin 68440-70-0	20 - 50	Aquatic Chronic 4 (H413)	-
Octamethylcyclotetrasiloxane 556-67-2	< 5	Flam. Liq. 3 (H226) Repr. 2 (H361f) Skin Irrit. 3 (H316) Eye Irrit. 2B (H320) Aquatic Chronic 4 (H413)	-
Toluene 108-88-3	40 - 70	Flam. Liq. 2 (H225) Repr. 2 (H361) STOT RE 2 (H373) STOT SE 3 (H336) Skin Irrit. 2 (H315) Eye Irrit. 2B (H320) Asp. Tox. 1 (H304) Aquatic Acute 2 (H401) Aquatic Chronic 3 (H412)	-

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 attention immediately.

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:

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. 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)

The below constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

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

Color:	clear
Appearance:	liquid
Odor:	aromatic
Boiling Point:	111 °C 232 °F (value for toluene)
Melting Point:	Not applicable
Vapor Pressure:	22mm Hg(value for toluene)
Specific Gravity/Density:	0.9 - 1.0
Vapor Density:	3.2
Percent Volatile (% by wt.):	53
pH:	Not available
Saturation In Air (% By Vol.):	Not available
Evaporation Rate:	1.9
Solubility In Water:	negligible
Volatile Organic Content:	550 gm/L
Flash Point:	2 °C 35 °F Tag Closed Cup

9. PHYSICAL AND CHEMICAL PROPERTIES

Flammability (solid, gas):	Not available
Flammable Limits (% By Vol):	Lower: 1.2 Upper: 7.0
Autoignition (Self) Temperature:	Not applicable
Decomposition Temperature:	Not applicable
Partition coefficient (n-octanol/water):	Not available
Odor Threshold:	Not available
Viscosity (Kinematic):	Not applicable

DUST HAZARD INFORMATION

Particle Size (microns):	Not applicable
Kst (bar-m/sec):	Not applicable
Maximum Explosion Pressure (Pmax):	Not applicable
Dust Class:	Not applicable
Minimum Ignition Energy (MIE) (mJ):	Not applicable
Minimum Ignition Temperature (MIT) (°C):	Not applicable
Minimum Explosive Concentration (MEC) (g/m ³):	Not applicable
Limiting Oxygen Concentration (LOC) (%):	Not applicable

10. STABILITY AND REACTIVITY

Stability:	Stable
Conditions To Avoid:	Keep away from heat, spark and flame.
Polymerization:	Will not occur
Conditions To Avoid:	None known
Materials To Avoid:	Strong oxidizing agents. Concentrated nitric acid, sulfuric acid, halogen and molten sulfur
Hazardous Decomposition Products:	Carbon dioxide Carbon monoxide (CO) Formaldehyde

11. TOXICOLOGICAL INFORMATION

PRODUCT TOXICITY INFORMATION

Likely Routes of Exposure: Oral, Eyes, Skin, Respiratory System.

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

The chemical, physical, and toxicological properties of this material have not been fully investigated. This material is expected to have a low order of oral and dermal toxicity. The acute oral (rat) and acute dermal (rabbit) LD50 values for Modified siloxane/silicone resin are estimated to be >2000 mg/kg, respectively. Direct contact is expected to minimal to slight eye and skin irritation.

Octamethylcyclotetrasiloxane has acute oral (rat), acute dermal (rat) and acute inhalation (rat-aerosol) LD/LC50 values of >2000 mg/kg, >2000 mg/kg and 36 mg/L, respectively. Direct contact with this material is expected to be minimally irritating to skin and eyes. Contact with this substance is not expected to produce dermal sensitization. In a three-week dermal exposure study in rabbits, there were no adverse effects and therefore the dermal NOAEL was greater than the highest dose tested 1 ml/kg bw/day. A two-generation reproductive toxicity study of octamethylcyclotetrasiloxane was conducted in rats exposed by whole-body vapor inhalation at concentrations of 70, 300, 500 and 700 ppm. Microscopic evaluation of the ovaries, uterus, vagina, mammary gland and pituitary gland of the F1 females suggested a subtle non-exposure responsive effect characterized by perturbation of the estrous cycle and accelerated reproductive senescence in F1 (but not F0) females at 70, 300, and 500 ppm, with a more obvious effect at 700 ppm. The NOAEC for reproductive toxicity and general systemic toxicity was therefore 300 ppm. In an inhalation developmental toxicity study in rabbits, Octamethylcyclotetrasiloxane did not affect fetal developmental and the NOAEC for this endpoint was therefore greater than the highest concentration tested (500 ppm). The NOAEC for maternal toxicity was 300 ppm based on reduced food consumption in the highest dose group. In a Combined Chronic Toxicity / Carcinogenicity groups of 192 rats (96/sex/dose) were exposed to concentrations of 0, 10, 30, 150 or 700 ppm by inhalation (whole body), 5 days per week, 6 hrs/day for up to 24 months. The No Observable Adverse Effect Concentration (NOAEC) of was established at 150 and ?700 ppm in females and males, respectively. Octamethylcyclotetrasiloxane was not mutagenic in the Ames assay or the Mouse Lymphoma Assay and was not clastogenic in the in vitro Chromosomal Aberrations Assay or an in vivo Rat Micronucleus Assay.

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.

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
Modified siloxane/silicone resin 68440-70-0	Not available	Not available	Not available
Octamethylcyclotetrasiloxane 556-67-2	Not available	LC50 > 1000 mg/L - Lepomis macrochirus (96h) LC50 > 500 mg/L - Brachydanio rerio (96h)	Not available
Toluene 108-88-3	EC50 = 12.5 mg/L - Green Algae (72h)	LC50 11-70.3 mg/L - Various Fish Species (96h) static LC50 5.8-28.2 mg/L - Various Fish Species (96h) semi-static LC50 5.89-19.05 mg/L - Various Fish Species (96h) flow-through NOEC = 1.39 mg/L - Coho Salmon (40 Day) flow-through	EC50 5.46 - 11.5 mg/L - Daphnia magna (48h) Static EC50 = 3.78 mg/L (measured) - Ceriodaphnia dubia (48h) Daily renewal NOEC = 0.74 - Ceriodaphnia dubia (7 Day) Daily Renewal

13. DISPOSAL CONSIDERATIONS

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
 Technical Name (N.O.S.): Toluene, Benzene

<u>Component / CAS No.</u>	<u>Hazardous Substances / Reportable Quantity of Product (lbs)</u>
Toluene	1428
Benzene	11111

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
 Technical Name (N.O.S.): Toluene

ICAO / IATA

Dangerous Goods? X
 Proper Shipping Name: Adhesives
 Hazard Class: 3
 Packing Group: II

UN Number: UN1133
 Transport Label Required: Flammable Liquid
 Technical Name (N.O.S.): Toluene

IMO

Dangerous Goods? X
 Proper Shipping Name: Adhesives
 Hazard Class: 3
 UN Number: UN1133
 Packing Group: II
 Transport Label Required: Flammable Liquid
 Technical Name (N.O.S.): Toluene

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.

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.

Component / CAS No.	%	TPQ (lbs)	RQ(lbs)	S313	TSCA 12B
Octamethylcyclotetrasiloxane 556-67-2	< 5	None		No	Yes
Toluene 108-88-3	40 - 70	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)**

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 15

Date Prepared: 02/19/2016

Date of last significant revision: 02/16/2016

Component Hazard Phrases

Modified siloxane/silicone resin

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

Octamethylcyclotetrasiloxane

H226 - Flammable liquid and vapor.

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

H316 - Causes mild skin irritation.

H320 - Causes eye irritation.

H361f - Suspected of damaging fertility.

Toluene

H225 - Highly flammable liquid and vapor.

H361 - Suspected of damaging fertility or the unborn child.

H373 - May cause damage to organs through prolonged or repeated exposure.

H336 - May cause drowsiness or dizziness.

H315 - Causes skin irritation.

H320 - Causes eye irritation.

H304 - May be fatal if swallowed and enters airways.

H401 - Toxic to aquatic life.

H412 - Harmful to aquatic life with long lasting effects.

Prepared By: Legal & Compliance Services; E-mail: custinfo@cytec.com

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SDS: 0008598
Date Prepared: 06/03/2016

SAFETY DATA SHEET

1. IDENTIFICATION

Product Name: DAPCO™ 3302 Silicone Adhesive, Part B
Product Description: Silane in solvent
Synonyms: None
Chemical Family: Silanes in Toluene and Isopropanol
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 (IXOM)
China (PRC) - +86 0532 83889090 (NRCC)
New Guinea - +61-3-9663-2130 or 1800-033-111
New Zealand - +61-3-9663-2130 or 0800-734-607 (IXOM)
India, Japan, Korea, Malaysia, Thailand - +65 3158 1074 (Carechem24 Singapore)
India (Hindi Speaking Only) - +65 3158 1198 or 000800 100 7479 (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
(Arabic speaking countries) - +44 (0) 1235 239 671

Latin America:

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

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

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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 1B
Serious Eye Damage / Eye Irritation Hazard Category 1
Skin Sensitizer Hazard Category 1B
Aspiration Hazard Category 1
Aquatic Environment Acute Hazard Category 2
Aquatic Environment Chronic Hazard Category 3

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 severe skin burns and eye damage
May cause an allergic skin reaction
May be fatal if swallowed and enters airways
Toxic to aquatic life
Harmful to aquatic life with long lasting effects

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.
Contaminated work clothing should not be allowed out of the workplace.
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.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
Wash contaminated clothing before reuse.
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.
If skin irritation or rash occurs: Get medical advice/attention.
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
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

Substance, Mixture or Article? Mixture

HAZARDOUS INGREDIENTS

Component / CAS No.	%	GHS Classification	Carcinogen
Organo-silane -	1 - 5	Acute Tox. 4 (H302) Skin Corr. 1B (H314) Eye Dam. 1 (H318) Skin Sens. 1B (H317)	-
Modified silane derivative -	1 - 5	Acute Tox. 4 (H332) Skin Irrit. 3 (H316) Eye Dam. 1 (H318) Skin Sens. 1B (H317) Aquatic Acute 2 (H401)	-
Ethylenediamine 107-15-3	< 0.1	Flam. Liq. 3 (H226) Acute Tox. 4 (H302) Acute Tox. 3 (H311) Acute Tox. 4 (H332) Skin Corr. 1B (H314) Eye Dam. 1 (H318) Resp. Sens. 1 (H334) Skin Sens. 1B (H317) Aquatic Chronic 3 (H412)	-
Isopropanol 67-63-0	30 - 60	Flam. Liq. 2 (H225) STOT SE 3 (H336) Skin Irrit. 3 (H316) Eye Irrit. 2A (H319)	Not applicable
Toluene 108-88-3	30 - 60	Flam. Liq. 2 (H225) Repr. 2 (H361) STOT RE 2 (H373) STOT SE 3 (H336) Skin Irrit. 2 (H315) Eye Irrit. 2B (H320) Asp. Tox. 1 (H304) Aquatic Acute 2 (H401) Aquatic Chronic 3 (H412)	-

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 attention immediately.

Skin Contact:

Wash immediately with plenty of water and soap. Remove contaminated clothing and shoes without delay. Obtain medical attention. Do not reuse contaminated clothing without laundering. Destroy or thoroughly clean shoes before reuse.

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. Wear protective gloves/clothing and eye/face protection. Contaminated work clothing should not be allowed out of the workplace. 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: 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 when spraying or curing at elevated temperatures.

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. A full facepiece respirator also provides eye and face protection.

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. Barrier creams may be used in conjunction with the gloves to provide additional skin protection. Wear impermeable gloves and suitable protective clothing.

Hand Protection:

Nitrile or fluorinated rubber gloves. Consider the porosity and elasticity data of the glove manufacturer and the specific conditions in the work place. Replace gloves immediately when torn or any change in appearance (dimension, colour, flexibility etc) is noticed. Barrier creams may help to protect the exposed areas of the skin, they should however not be applied once exposure has occurred.

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)

The below constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

107-15-3	Ethylenediamine	
OSHA (PEL):		10 ppm (TWA) 25 mg/m ³ (TWA)
ACGIH (TLV):		(skin) 10 ppm (TWA)
Other Value:		Not established
108-88-3	Toluene	

107-15-3 Ethylenediamine

OSHA (PEL):	200 ppm (TWA) 300 ppm (Ceiling)
ACGIH (TLV):	20 ppm (TWA)
Other Value:	Not established

67-63-0 Isopropanol

OSHA (PEL):	400 ppm (TWA) 980 mg/m ³ (TWA)
ACGIH (TLV):	400 ppm (STEL) 200 ppm (TWA)
Other Value:	Not established

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	clear
Appearance:	liquid
Odor:	amine
Boiling Point:	>82 °C 180 °F
Melting Point:	Not applicable
Vapor Pressure:	>33mm Hg @ 20 °C
Specific Gravity/Density:	0.83
Vapor Density:	>2
Percent Volatile (% by wt.):	>95
pH:	Not applicable
Saturation In Air (% By Vol.):	Not available
Evaporation Rate:	>2
Solubility In Water:	Reacts with water
Volatile Organic Content:	815 gm/L
Flash Point:	7 °C 45 °F (value for toluene) Tag Closed Cup
Flammability (solid, gas):	Not available
Flammable Limits (% By Vol):	Lower: 1.4 Upper: 12.0
Autoignition (Self) Temperature:	Not applicable
Decomposition Temperature:	Not applicable
Partition coefficient (n-octanol/water):	Not applicable
Odor Threshold:	Not available
Viscosity (Kinematic):	Cannot be measured at 40°C due to Flash point

DUST HAZARD INFORMATION

Particle Size (microns):	Not applicable
Kst (bar-m/sec):	Not applicable
Maximum Explosion Pressure (Pmax):	Not applicable
Dust Class:	Not applicable
Minimum Ignition Energy (MIE) (mJ):	Not applicable
Minimum Ignition Temperature (MIT) (°C):	Not applicable
Minimum Explosive Concentration (MEC) (g/m ³):	Not applicable
Limiting Oxygen Concentration (LOC) (%):	Not applicable

10. STABILITY AND REACTIVITY

Stability:	Stable
Conditions To Avoid:	None known
Polymerization:	Will not occur

Conditions To Avoid:	None known
Materials To Avoid:	Strong oxidizers, acids.
Hazardous Decomposition Products:	May produce fumes smoke Carbon monoxide (CO) Carbon dioxide nitrogen silicon

11. TOXICOLOGICAL INFORMATION

PRODUCT TOXICITY INFORMATION

Likely Routes of Exposure: Eyes, Skin, Oral.

ACUTE TOXICITY DATA

oral (gavage)	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	Corrosive
Acute Irritation	eye	Causes serious damage

ALLERGIC SENSITIZATION

Sensitization	skin	Sensitizing
Sensitization	respiratory	No data

GENOTOXICITY

Assays for Gene Mutations

Ames Salmonella Assay	No data
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OTHER INFORMATION

The product toxicity information above has been estimated.

HAZARDOUS INGREDIENT TOXICITY DATA

Organo-silane has acute oral (rat) LD50 values of >1000 mg/kg (females) and >2000 mg/kg for (males). The acute dermal (rabbit) LD50 is >4000 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 Organo-silane can cause damage to the gastrointestinal tract, liver, and kidneys. Absorption of this material caused kidney damage in laboratory animals.

Modified silane derivative has acute oral (rat) and acute dermal (rabbit) LD50 values of 2295 and >2000 mg/kg, respectively. The acute 4-hr inhalation (rat-aerosol) LC50 is >1.49-2.44 mg/L. Direct contact with this substance causes serious eye damage and may cause mild skin irritation. This material did produce dermal sensitization when tested in guinea pigs. Based on a battery of in vitro and in vivo studies this substance is not expected to be mutagenic, genotoxic or clastogenic. In a Combined Repeated Dose and Reproductive/Developmental Screening test, male and female rats were dosed via oral gavage at 25, 125 or 500 mg/kg/day. The No-Observed-Adverse-Effect-Level (NOAEL) for parental systemic effects, parental reproductive performance, fertility and developmental effects (offspring) was >500 mg/kg/day. Treatment of rats to Modified silane derivative for nine cutaneous applications during an 11-day period produced transient clinical, necropsy and microscopic observations indicative of mild to moderate skin irritation in males treated with 772.5 and 1545 mg/kg bw/day and females treated with 257.5 mg/kg bw/day and above. There was no clear indication of systemic toxicity. Therefore the NOAEL for systemic effects is at least 1545 mg/kg bw/day in rats.

Ethylenediamine has acute oral (rat) and dermal (rabbit) LD50 values of 866 mg/kg and 560 mg/kg, respectively. The acute 4-hour inhalation LC50 (rat) is 14.7 mg/l (vapors). Ethylenediamine may give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. This material may cause allergy or asthma symptoms or breathing difficulties if inhaled. Direct contact with liquid ethylenediamine causes burns of eyes and skin. Prolonged or repeated exposure may cause dermal sensitization.

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.

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.

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

12. ECOLOGICAL INFORMATION

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

Overall Environmental Toxicity: Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

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
Organo-silane	Not available	Not available	Not available
Modified silane derivative	ErC50 = 8.8 mg/L (nominal) - Green Algae (72h) NOEC = 3.1 mg/L (nominal) - Green Algae (72h)	LC50 = 597 mg/L (measured) - Zebrafish (96h) semi-static	EC50 = 81 mg/L (nominal) - Daphnia magna (48h)
Ethylenediamine 107-15-3	EC50 = 151 mg/L - Pseudokirchneriella subcapitata (96h) EC50 = 645 mg/L - Pseudokirchneriella subcapitata (72h)	LC50 98.6 - 131.6 mg/L - Pimephales promelas (96h) static LC50 180 - 560 mg/L - Poecilia reticulata (96h) semi-static LC50 = 115.7 mg/L - Pimephales promelas (96h) semi-static LC50 191 - 254 mg/L - Pimephales promelas (96h) flow-through	EC50 = 17 mg/L - Daphnia magna (48h)
Isopropanol 67-63-0	EC50 > 1000 mg/L - Desmodesmus subspicatus (72h) EC50 > 1000 mg/L - Desmodesmus subspicatus (96h)	LC50 > 1400000 µg/L - Lepomis macrochirus (96h) LC50 = 11130 mg/L - Pimephales promelas (96h) static LC50 = 9640 mg/L - Pimephales promelas (96h) flow-through	EC50 = 13299 mg/L - Daphnia magna (48h)
Toluene 108-88-3	EC50 = 12.5 mg/L - Green Algae (72h)	LC50 11-70.3 mg/L - Various Fish Species (96h) static LC50 5.8-28.2 mg/L - Various Fish Species (96h) semi-static LC50 5.89-19.05 mg/L - Various Fish Species (96h) flow-through NOEC = 1.39 mg/L - Coho Salmon (40 Day) flow-through	EC50 5.46 - 11.5 mg/L - Daphnia magna (48h) Static EC50 = 3.78 mg/L (measured) - Ceriodaphnia dubia (48h) Daily renewal NOEC = 0.74 - Ceriodaphnia dubia (7 Day) Daily Renewal

13. DISPOSAL CONSIDERATIONS

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.): Toluene, Organo silane

<u>Component / CAS No.</u>	<u>Hazardous Substances / Reportable Quantity of Product (lbs)</u>
Toluene	1666.667

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: 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.): Toluene, Organo 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.): Toluene, Organo 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.): Toluene, Organo 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.

Taiwan: All components of this product are included on the Taiwan Chemical Substance Inventory (TCSI) or are not required to be listed on the Taiwan 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
Isopropanol 67-63-0	30 - 60	None		Yes	No
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)

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 2
Revised Section 3
Revised Section 12

Date Prepared: 06/03/2016

Date of last significant revision: 06/03/2016

Component Hazard Phrases

Organo-silane

- H302 - Harmful if swallowed.
- H314 - Causes severe skin burns and eye damage.
- H317 - May cause an allergic skin reaction.

Modified silane derivative

- H316 - Causes mild skin irritation.
- H317 - May cause an allergic skin reaction.
- H318 - Causes serious eye damage.
- H332 - Harmful if inhaled.
- H401 - Toxic to aquatic life.

Ethylenediamine

- H226 - Flammable liquid and vapor.
- H302 - Harmful if swallowed.
- H311 - Toxic in contact with skin.
- H332 - Harmful if inhaled.
- H314 - Causes severe skin burns and eye damage.
- H317 - May cause an allergic skin reaction.
- H318 - Causes serious eye damage.
- H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H412 - Harmful to aquatic life with long lasting effects.

Isopropanol

- H225 - Highly flammable liquid and vapor.
- H316 - Causes mild skin irritation.
- H319 - Causes serious eye irritation.
- H336 - May cause drowsiness or dizziness.

Toluene

- H225 - Highly flammable liquid and vapor.
- H361 - Suspected of damaging fertility or the unborn child.
- H373 - May cause damage to organs through prolonged or repeated exposure.
- H336 - May cause drowsiness or dizziness.
- H315 - Causes skin irritation.
- H320 - Causes eye irritation.
- H304 - May be fatal if swallowed and enters airways.
- H401 - Toxic to aquatic life.
- H412 - Harmful to aquatic life with long lasting effects.

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