



MSDS: 0007667
Print Date: 08/20/2009
Revision Date: 08/20/2009

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: DAPCO™ 3300 Silicone Adhesive, Part A
Synonyms: None
Chemical Family: Silicone in Toluene
Molecular Formula: Mixture
Molecular Weight: Mixture

D Aircraft Products, Inc.
1191 HAWK CIRCLE, ANAHEIM, CALIFORNIA 92807 714/632-8444

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

Asia Pacific Region:

Australia - +61-3-9663-2130 or 1800-033-111
China (PRC) - +86(0)532-8388-9090 (NRCC)
New Guinea - +61-3-9663-2130
New Zealand - +61-3-9663-2130 or 0800-734-607
All Others - +65-633-44-177 (CareChem24 Singapore)

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

Europe/Africa/Middle East: +44-(0)208-762-8322 (CareChem24 UK)

Latin America:

Brazil - 0800 0111 767 (SOS Cotec)
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)

™ indicates trademark. Mark may be registered or pending. Mark is or may be used under license.

2. COMPOSITION/INFORMATION ON INGREDIENTS

OSHA REGULATED COMPONENTS

Component / CAS No.	% (w/w)	OSHA (PEL):	ACGIH (TLV):	Carcinogen
Toluene 108-88-3	40.0 - 70.0	200 ppm (TWA) 300 ppm (Ceiling)	20 ppm (TWA)	IARC 2B
Octamethylcyclotetrasiloxane 556-67-2	< 5	Not established	Not established	-

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

APPEARANCE AND ODOR:

Color: clear

3. HAZARDS IDENTIFICATION

Appearance: liquid
Odor: aromatic

STATEMENTS OF HAZARD:

DANGER! FLAMMABLE LIQUID AND VAPOR
CAUSES EYE BURNS AND SKIN IRRITATION
VAPOR IRRITATING

CHRONIC HAZARD WARNING:

CONTAINS MATERIAL WHICH CAUSED REPRODUCTIVE DISORDERS IN LABORATORY ANIMAL TESTS
Risk of effects depends on duration and level of exposure

POTENTIAL HEALTH EFFECTS

EFFECTS OF EXPOSURE:

The estimated acute oral (rat) LD50, acute dermal (rabbit) LD50 and 4-hour inhalation (rat) LC50 values for this material are >862 mg/kg, >2,000 mg/kg and >20 mg/L mg/l, respectively. Direct contact with this material may cause severe eye and moderate skin irritation. Overexposure to vapor may cause respiratory tract irritation and central nervous system depression. Refer to Section 11 for toxicology information on the regulated components of this product.

4. FIRST AID MEASURES

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.

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.

Eye Contact:

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

Inhalation:

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

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.

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.

7. HANDLING AND STORAGE

HANDLING

Precautionary Measures: Keep away from heat, sparks and flame. Do not get in eyes, on skin or on clothing. Do not breathe vapor. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

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.

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.

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 @ 20 °C
Specific Gravity/Density:	0.99
Vapor Density:	3.2
Percent Volatile (% by wt.):	55
pH:	Not available
Saturation In Air (% By Vol.):	Not available
Evaporation Rate:	1.9
Solubility In Water:	negligible
Volatile Organic Content:	595 gm/L
Flash Point:	2 °C 35 °F Tag Closed Cup
Flammable Limits (% By Vol):	Lower: 1.2 Upper: 7.0
Autoignition Temperature:	Not applicable
Decomposition Temperature:	Not applicable
Partition coefficient (n-octanol/water):	Not available
Odor Threshold:	Not available

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:	Avoid contact with strong oxidizing agents. Concentrated nitric acid, sulfuric acid, halogen and molten sulfur
Hazardous Decomposition Products:	Carbon dioxide Carbon monoxide (CO) Formaldehyde

11. TOXICOLOGICAL INFORMATION

Toxicological information for the product is found under Section 3. HAZARDS IDENTIFICATION.
Toxicological information on the regulated components of this product is as follows:

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.

11. TOXICOLOGICAL INFORMATION

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

May cause long-term adverse effects in the aquatic environment.

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

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 2 (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

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>
Toluene	1428.571
Benzene	11111.11

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

Packing Instructions/Maximum Net Quantity Per Package:

Passenger Aircraft: 305; 5 L

Cargo Aircraft: 307; 60 L

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.

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: 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	0	No	No
Benzene 71-43-2	< 0.1	None	10	Yes	No
Toluene 108-88-3	40.0 - 70.0	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 15

Randy Deskin, Ph.D., DABT +1-973-357-3100

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.



MSDS: 0007668
Print Date: 06/22/2006
Revision Date: 06/22/2006

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: DAPCO™ 3300 Silicone Adhesive, Part B
Synonyms: None
Product Description: Silane in solvent
Intended/Recommended Use: Engineered materials

Supplied By: D Aircraft Products, Inc.
1191 HAWK CIRCLE, ANAHEIM, CALIFORNIA 92807 714/632-8444
EMERGENCY PHONE: In CANADA: 1-905/356-8310 In USA: 1-800/424-9300 or 1-703/527-3887.

Manufactured By: D Aircraft Products, Inc., a wholly owned subsidiary of Cytec Industries Inc.
1191 HAWK CIRCLE, ANAHEIM, CALIFORNIA 92806 714/632-8444

™ indicates trademark. Mark may be registered or pending. Mark is or may be used under license.

2. COMPOSITION/INFORMATION ON INGREDIENTS

WHMIS REGULATED COMPONENTS

Component / CAS No.	% (w/w)	OSHA (PEL):	ACGIH (TLV)	Carcinogen
gamma-Aminopropyltriethoxy silane 919-30-2	< 5.0	Not established	Not established	-
N-[3-(Trimethoxy-silyl)propyl]-1,2-ethanediamine 1760-24-3	< 5.0	Not established	Not established	-
Isopropanol 67-63-0	30.0 - 60.0	400 ppm (TWA) 980 mg/m ³ (TWA)	200 ppm (TWA) 400 ppm (STEL)	-
Toluene 108-88-3	30.0 - 60.0	200 ppm (TWA) 300 ppm (Ceiling)	50 ppm (TWA) (skin)	-

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

APPEARANCE AND ODOR:

Color: clear
Appearance: liquid
Odor: amine

STATEMENTS OF HAZARD:

DANGER! FLAMMABLE LIQUID AND VAPOR
CAUSES EYE BURNS AND SKIN IRRITATION
VAPOR IRRITATING

CHRONIC HAZARD WARNING:

CONTAINS MATERIAL WHICH CAUSED REPRODUCTIVE DISORDERS IN LABORATORY ANIMAL TESTS

Risk of effects depends on duration and level of exposure

POTENTIAL HEALTH EFFECTS**EFFECTS OF EXPOSURE:**

The acute oral (rat) and dermal (rabbit) LD50 values are estimated to be greater than 5,000 mg/kg and greater than 2,000 mg/kg, respectively. Overexposure to vapor may cause respiratory tract irritation and central nervous system depression. Direct contact with this material may cause severe eye and moderate skin irritation. Refer to Section 11 for toxicology information on the regulated components of this product.

4. FIRST AID MEASURES**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.

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.

Eye Contact:

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

Inhalation:

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

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.

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.

Mechanical/Static Sensitivity Statements:

Areas containing this material should have fire-safe practices and electrical equipment in accordance with applicable governmental regulations for products with the flashpoint as shown (Physical and Chemical Properties Section).

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.

7. HANDLING AND STORAGE

HANDLING

Precautionary Measures: Keep away from heat, sparks and flame. Do not get in eyes, on skin or on clothing. Do not breathe vapor. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

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: Integrity.

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.

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.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

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
Flammable Limits (% By Vol):	Lower: 1.4 Upper: 12.0
Autoignition Temperature:	Not applicable
Decomposition Temperature:	Not applicable
Partition coefficient (n-octanol/water):	Not applicable
Odor Threshold:	Not available

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 carbon dioxide nitrogen silicon

11. TOXICOLOGICAL INFORMATION

Toxicological information for the product is found under Section 3. HAZARDS IDENTIFICATION.

Toxicological information on the regulated components of this product is as follows:

N-[3-(trimethoxysilyl)]-1,2-ethanediamine, also known as N-Beta-(Aminoethyl)- gamma-aminopropyltrimethoxysilane is a severe eye irritant. Direct contact may cause mild skin irritation. Other toxicological properties have not been fully investigated.

gamma-Aminopropyltriethoxy silane has acute oral (rat) and dermal (rabbit) LD50 values of 1780 mg/kg and 4000 mg/kg, respectively. Direct contact with this material caused severe eye and skin irritation when tested in rabbits. Test animals displayed central nervous system effects during acute toxicity studies. Inhalation of vapors can cause irritation of the eyes and upper respiratory tract. Prolonged contact with eyes or skin can cause chemical burns and tissue destruction and may also result in dermal sensitization. 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.

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.

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.

12. ECOLOGICAL INFORMATION

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The ecological assessment for this material is based on an evaluation of its components.

13. DISPOSAL CONSIDERATIONS

Cytec encourages the recycle, recovery and reuse of materials, where permitted, as an alternative to disposal as a waste. Cytec recommends that organic materials classified as hazardous waste according to the relevant local or national regulations be disposed of by thermal treatment or incineration at approved facilities. All local and national regulations should be followed.

14. TRANSPORT INFORMATION

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

US DOT

Proper Shipping Name: Adhesives

Hazard Class: 3
Packing Group: II
UN/ID Number: UN1133
Transport Label Required: Flammable Liquid
Hazardous Substances:

<u>Component / CAS No.</u>	<u>Reportable Quantity of Product (lbs)</u>
Toluene	1,667

TRANSPORT CANADA

Proper Shipping Name: Adhesives
Hazard Class: 3
Packing Group: II
UN Number: 1133
Transport Label Required: Flammable Liquid

ICAO / IATA

Proper Shipping Name: Adhesives
Hazard Class: 3
Packing Group: II
UN Number: 1133
Transport Label Required: Flammable Liquid
Packing Instructions/Maximum Net Quantity Per Package:
Passenger Aircraft: 305; 5L
Cargo Aircraft: 307; 60L

IMO

Proper Shipping Name: Adhesives
Hazard Class: 3
UN Number: 1133
Packing Group: II
Transport Label Required: Flammable Liquid

15. REGULATORY INFORMATION

This product has been classified in accordance with the hazard criteria of the Controlled products Regulations and this Material Safety Data Sheet contains all the information required by the Controlled Products Regulations.

WHMIS CLASSIFICATION:

Class B2 Flammable Liquid
Class D2A Very Toxic
Class D2B Toxic

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 Union (EU): All components of this product are included on the European Inventory of Existing Chemical Substances (EINECS) or are not required to be listed on EINECS.

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.

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.

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

Reasons For Issue: New Format

Prepared By: Randy Deskin, Ph.D., DABT +1-973-357-3100

Date: 08/15/2003

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.
