SPECTRUM®

ISO 9002 CERTIFIED

GARDENA, CA
NEW BRUNSWICK, NJ

Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment
		
		See Section 15.

Section 1. Chemical Product and Company Identification

Common Name/ Trade Name	**1,1,1-Trichloroethane**
Manufacturer	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248
Commercial Name(s)	1,1,1-TCE; Aerothene TT; Chlorothene; Chlorten; Inhipisol; Tafclean;
Synonym	Methyl Chloroform; Methylchloroform; Methyltrichloromethane; Trichloroethane
Chemical Name	Ethane, 1,1,1-trichloro-
Chemical Family	Not available.
Chemical Formula	CH3CCl3
Supplier	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248

Catalog Number(s).	T1110, T1111, T1112,
CAS#	71-55-6
RTECS	KJ2975000
TSCA	TSCA 8(b) inventory: 1,1,1-Trichloroethane
CI#	Not available.

IN CASE OF EMERGENCY
CHEMTREC (24hr) 800-424-9300

CALL (310) 516-8000

Section 2.Composition and Information on Ingredients

		Exposure Limits			
Name	**CAS #**	**TWA (mg/m³)**	**STEL (mg/m³)**	**CEIL (mg/m³)**	**% by Weight**
1) {1,1,1-}Trichloroethane	71-55-6	1900		350	100

Toxicological Data on Ingredients

1,1,1-Trichloroethane:
ORAL (LD50): Acute: 9600 mg/kg [Rat]. 6000 mg/kg [Mouse]. 9470 mg/kg [Guinea pig].
VAPOR (LC50): Acute: 18000 ppm 4 hours [Rat]. 3911 ppm 2 hours [Mouse].

Section 3. Hazards Identification

Potential Acute Health Effects

Hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation. Slightly hazardous in case of skin contact (permeator), of ingestion.

Potential Chronic Health Effects

CARCINOGENIC EFFECTS: 3 (Not classifiable for human.) by IARC.
MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.
The substance may be toxic to kidneys, liver, skin, central nervous system (CNS).
Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. WARM water MUST be used. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Serious Skin Contact	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Serious Inhalation	Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek medical attention.
Ingestion	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.
Serious Ingestion	Not available.

Section 5. Fire and Explosion Data

Flammability of the Product	May be combustible at high temperature.
Auto-Ignition Temperature	500℃ (932℉) - 537 C.
Flash Points	Not available.
Flammable Limits	LOWER: 7- 8% UPPER: 10.5 - 16%
Products of Combustion	These products are carbon oxides (CO, CO2), halogenated compounds.
Fire Hazards in Presence of Various Substances	Slightly flammable to flammable in presence of open flames and sparks, of heat.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. Slightly explosive in presence of oxidizing materials, of acids, of alkalis.
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.
Special Remarks on Fire Hazards	Not available.
Special Remarks on Explosion Hazards	Not available.

Section 6. Accidental Release Measures

Small Spill	Absorb with an inert material and put the spilled material in an appropriate waste disposal.
Large Spill	Absorb with an inert material and put the spilled material in an appropriate waste disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7. Handling and Storage

Precautions	Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, metals, acids, alkalis.
Storage	Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Personal Protection	Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	TWA: 350 (ppm) from OSHA (PEL) [United States] TWA: 1900 (mg/m^3) from OSHA (PEL) [United States] CEIL: 350 (ppm) from NIOSH [United States] CEIL: 1900 (mg/m^3) from NIOSH [United States] TWA: 1910 STEL: 2455 (mg/m^3) [Canada] TWA: 100 STEL: 200 (ppm) [United Kingdom (UK)] TWA: 555 STEL: 1110 (mg/m^3) [United Kingdom (UK)] TWA: 350 STEL: 450 (ppm) from ACGIH (TLV) [United States] TWA: 350 STEL: 440 (ppm) [Canada] Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical state and appearance	Liquid.	**Odor**	Chloroform-like Sweetish. Ethereal.
Molecular Weight	133.41 g/mole	**Taste**	Not available.
pH (1% soln/water)	Not available.	**Color**	Colorless.
Boiling Point	74℃ (165.2℉) - 75 C		
Melting Point	-30℃ (-22℉) to -33 C.		
Critical Temperature	311.5℃ (592.7℉)		
Specific Gravity	1.3376 (Water = 1)		
Vapor Pressure	13.3 kPa (@ 20℃)		
Vapor Density	4.6 (Air = 1)		
Volatility	Not available.		
Odor Threshold	44 - 546 ppm At 100 ppm, the odor is noticeable, but even concentrations of 500 ppm and 1000 ppm were not considered unpleasant enough to discourage exposure		
Water/Oil Dist. Coeff.	The product is more soluble in oil; log(oil/water) = 2.27 - 2.49		
Ionicity (in Water)	Not available.		
Dispersion Properties	See solubility in water, methanol, diethyl ether, acetone.		
Solubility	Soluble in methanol, diethyl ether, acetone. Very slightly soluble in cold water. Soluble in benzene, carbon tetrachloride, carbon disulfide, chloroform. Soluble in all common organic solvents. Solubility in Water: 4,400 mg/l at 20 deg. C. Solubility in Ethyl Ether: >10% Solubility in Chloroform: >10%		

Section 10. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	Excess heat, incompatible materials
Incompatibility with various substances	Reactive with oxidizing agents, metals, acids, alkalis.
Corrosivity	Extremely corrosive in presence of aluminum. Corrosive in presence of zinc. Non-corrosive in presence of glass.
Special Remarks on Reactivity	Can undergo reactions with the following compouds: acetone, alkaline solutions (e.g., an aqueous suspension of calcium hydroxide to form 1,1-dichloroethene), aluminum oxide +heavy metals, amides, aqueous acids, azides, strong caustics, dinitrogen tetraoxide, inhibitors, liquid oxygen, metals and their alloys (e.g., aluminum; magnesium; potassium; potassium-sodium alloy; sodium), metal powders (including copper; bronze) (reacts violently), molecular sieve, strong oxidizers, oxygen, sodium hydroxide
Special Remarks on Corrosivity	Readly corrodes aluminum and aluminum alloys. Moderate corrosive effect on iron.
Polymerization	Will not occur.

Section 11. Toxicological Information

Routes of Entry	Absorbed through skin. Eye contact. Inhalation.
Toxicity to Animals	\Acute oral toxicity (LD50): 6000 mg/kg [Mouse]. Acute toxicity of the vapor (LC50): 3911 2 hours [Mouse].
Chronic Effects on Humans	**CARCINOGENIC EFFECTS:** 3 (Not classifiable for human.) by IARC. **MUTAGENIC EFFECTS:** Mutagenic for bacteria and/or yeast. May cause damage to the following organs: kidneys, liver, skin, central nervous system (CNS).
Other Toxic Effects on Humans	Hazardous in case of skin contact (irritant), of inhalation. Slightly hazardous in case of skin contact (permeator), of ingestion.
Special Remarks on Toxicity to Animals	Lethal Dose/Conc 50% Kill: LD50[Dog] - Route: Oral; Dose: 750 mg/kg LD50[Rabbit] - Route: Oral; Dose: 5660 mg/kg
Special Remarks on Chronic Effects on Humans	May affect genetic material (mutagenic). May cause adverse reproductive effects and birth defects (teratogenic) based on animal test data. May cause cancer based on animal test data
Special Remarks on other Toxic Effects on Humans	Acute Potential Health Effects: Skin: Causes moderate skin irritation. It can be absorbed through the skin. Eyes: Causes mild to severe eye irritation. Inhalation: Harmful if inhaled. May cause loss of appetite. May affect behavior/central nervous system (central nervous system depression, tremor, ataxia, irritability, aggression, hallucinations, excitement, dizziness, drowsiness, fatigue, lightheadness, impaired judgement, decreased reaction time, decreased manual dexterity), respiration (respiratory depression, asphyxiation), cardiovascular system (arrhythmias, hypotension). May also affect liver, kidneys, blood (changes in red blood cell count, eosinophilia), brain (degenerative changes) Ingestion: May cause nausea, abdominal cramps, esophageal irritation, vomiting, hypermotility, diarrhea, loss of appetite. It may affect the cardiovascular system (pulse rate, hypotension, cardiac fibrilation) Chronic Potential Health Effects: Inhalation: Prolonged or repeated inhalation may cause weight loss and symptoms similar to that of acute inhalation. Ingestion: Prolonged or repeated ingeston may cause weight loss, and may affect the spleen, kidneys, liver Skin: Prolonged or repeated skin contact may defat the skin causing redness, rash, and dry, scaly , fissured dermatitis.

Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation	The products of degradation are as toxic as the product itself.
Special Remarks on the Products of Biodegradation	Not available.

Section 13. Disposal Considerations

Waste Disposal	Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14. Transport Information

DOT Classification	CLASS 6.1: Poisonous material.
Identification	UNNA: 2831 : 1,1,1-Trichloroethane PG: III
Special Provisions for Transport	Not available.
DOT (Pictograms)	

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations	Connecticut hazardous material survey.: 1,1,1-Trichloroethane Illinois toxic substances disclosure to employee act: 1,1,1-Trichloroethane Illinois chemical safety act: 1,1,1-Trichloroethane New York release reporting list: 1,1,1-Trichloroethane Rhode Island RTK hazardous substances: 1,1,1-Trichloroethane Pennsylvania RTK: 1,1,1-Trichloroethane Minnesota: 1,1,1-Trichloroethane Massachusetts RTK: 1,1,1-Trichloroethane Massachusetts spill list: 1,1,1-Trichloroethane New Jersey: 1,1,1-Trichloroethane New Jersey spill list: 1,1,1-Trichloroethane Louisiana spill reporting: 1,1,1-Trichloroethane California Director's List of Hazardous Substances: 1,1,1-Trichloroethane TSCA 8(b) inventory: 1,1,1-Trichloroethane TSCA 8(a) IUR: 1,1,1-Trichloroethane TSCA 8(d) H and S data reporting: 1,1,1-Trichloroethane: Effective date: 10/04/82; Sunset date: 10/04/92 SARA 313 toxic chemical notification and release reporting: 1,1,1-Trichloroethane CERCLA: Hazardous substances.: 1,1,1-Trichloroethane: 1000 lbs. (453.6 kg)
California Proposition 65 Warnings	California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found. California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.
Other Regulations	

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).
EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances (EINECS No. 200-756-3).
Canada: Listed on Canadian Domestic Substance List (DSL).
China: Listed on National Inventory.
Japan: Listed on National Inventory (ENCS).
Korea: Listed on National Inventory (KECI).
Philippines: Listed on National Inventory (PICCS).
Australia: Listed on AICS.

Other Classifications

WHMIS (Canada)
CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC).
CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC)
R20- Harmful by inhalation.
R59- Dangerous for the ozone layer.
S59- Refer to manufacturer/supplier for information on recovery/recycling.
S61- Avoid release to the environment. Refer to special instructions/Safety data sheets.
S24/25- Avoid contact with skin and eyes.

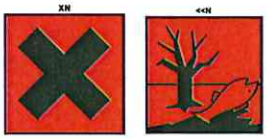
HMIS (U.S.A.)

Health Hazard	2
Fire Hazard	1
Reactivity	0
Personal Protection	h

National Fire Protection Association (U.S.A.)

WHMIS (Canada) (Pictograms)

DSCL (Europe) (Pictograms)



TDG (Canada) (Pictograms)

ADR (Europe) (Pictograms)

Protective Equipment


Gloves.


Lab coat.


Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.


Splash goggles.

Section 16. Other Information

MSDS Code	**T3820**
References	Not available.
Other Special Considerations	Major Uses: solvent for natural and synthetic resins, oils, waxes, tar, and alkaloids; dry cleaning agent; in cold type metal cleaning; cleaning plasitic molds, spotting fluid in textile processing; chemical intermediate; in adhesives and coatings, coolant and lubricant in metal cutting oils; extraction solvent; vapor degreasng; cleaning of electrical equipment, motors, electronic components and instruments, missle hardware, paint masks, photographic film, printed circuit boards. Note: 1,1,1-Trichloroethane harms public health and the environment by destroying ozone in the upper atmosphere.

Validated by Sonia Owen on 6/21/2012.

Verified by Sonia Owen.

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CALL (310) 516-8000

Notice to Reader