Material Safety Data Sheet

Trichloroethylene

MSDS# 23850

Section 1 - Chemical Product and Company Identification

MSDS Name:	Trichloroethylene
Catalog Numbers:	AC158310000, AC158310025, AC421520000, AC421520040, AC421520200, AC421525000 AC421525000, 15831-0010, S80327ACS-1, S80327ACS-2, T340-4, T341-20, T341-4, T341-500, T341J4, T403-4
Synonyms:	Ethylene trichloride; 1,1,2-Trichloroethylene; TCE.

Company Identification:	Fisher Scientific One Reagent Lane Fair Lawn, NJ 07410
For information in the US, call:	201-796-7100
Emergency Number US:	201-796-7100
CHEMTREC Phone Number, US:	800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#:	79-01-6
Chemical Name:	Trichloroethylene
%:	99+
EINECS#:	201-167-4

Hazard Symbols: T

Risk Phrases: 45 36/38 52/53 67 68

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Warning! May cause respiratory tract irritation. Possible risks of irreversible effects. May cause central nervous system effects. May cause liver and kidney damage. Causes eye and skin irritation. Cancer hazard. Breathing vapors may cause drowsiness and dizziness. Harmful to aquatic organisms; may cause long-term adverse effects in the aquatic environment.

Target Organs: Kidneys, central nervous system, liver, spleen, respiratory system, eyes, skin.

Potential Health Effects

Eye:	Causes eye irritation.
Skin:	Causes skin irritation. May be harmful if absorbed through the skin.
Ingestion:	May cause irritation of the digestive tract. May be harmful if swallowed. May cause central nervous system effects.
Inhalation:	May cause respiratory tract irritation. May cause liver and kidney damage. May be harmful if inhaled. May cause central nervous system effects.
Chronic:	Prolonged or repeated skin contact may cause defatting and dermatitis. May cause liver and kidney damage. May cause cancer in humans. Repeated exposure may cause damage to the spleen. Adverse reproductive effects have been reported in animals. Laboratory experiments have resulted in mutagenic effects. Possible risk of irreversible effects.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: Do not induce vomiting. Get medical aid.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or chemical foam.

Autoignition Temperature: 410 deg C (770.00 deg F)

Flash Point: Not applicable.

Explosion Limits: Lower: 7.9 Vol %

Explosion Limits: Upper: 90 Vol %

NFPA Rating: health: 2; flammability: 1; instability: 1;

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Wear a self contained breathing apparatus and appropriate personal protection. (See Exposure Controls, Personal Protection section). Remove all sources of ignition. Use a spark-proof tool. Do not let this chemical enter the environment.

Section 7 - Handling and Storage

Handling: Do not get in eyes, on skin, or on clothing. Keep away from heat, sparks and flame. Do not ingest or inhale. Use only in a chemical fume hood.

Storage: Keep away from sources of ignition. Store in a cool, dry place. Store in a tightly closed container. Store protected from light.

Section 8 - Exposure Controls, Personal Protection

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Trichloroethylene	10 ppm; 25 ppm STEL	1000 ppm IDLH	100 ppm TWA; 200 ppm Ceiling

OSHA Vacated PELs: Trichloroethylene: 50 ppm TWA; 270 mg/m3 TWA

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood.

Exposure Limits

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State:	Liquid
Color:	clear, colorless - APHA: 15 max
Odor:	chloroform-like
pH:	Not available
Vapor Pressure:	77.3 mbar @ 20 deg C
Vapor Density:	4.5 (air=1)
Evaporation Rate:	Not available
Viscosity:	Not available
Boiling Point:	87 deg C @ 760 mmHg (188.60°F)
Freezing/Melting Point:	-86 deg C (-122.80°F)
Decomposition Temperature:	Not available
Solubility in water:	Insoluble
Specific Gravity/Density:	1.460
Molecular Formula:	C2HCl3
Molecular Weight:	131.39

Section 10 - Stability and Reactivity

Chemical Stability:	Moisture sensitive. Light sensitive.
Conditions to Avoid:	Incompatible materials, light, ignition sources, excess heat, exposure to moist air or water.
Incompatibilities with Other Materials	Strong oxidizing agents, strong reducing agents, bases, active metals, metals and metal compounds (toxic, e.g. beryllium, lead acetate, nickel carbonyl, tetraethyl lead).
Hazardous Decomposition Products	Hydrogen chloride, carbon monoxide, carbon dioxide.
Hazardous Polymerization	Will not occur.

Section 11 - Toxicological Information

RTECS#: CAS# 79-01-6: KX4550000

RTECS:

CAS# 79-01-6: Draize test, rabbit, eye: 20 mg/24H Moderate;
Draize test, rabbit, skin: 2 mg/24H Severe;
Inhalation, mouse: LC50 = 8450 ppm/4H;
Inhalation, mouse: LC50 = 220000 mg/m3/20M;
Inhalation, mouse: LC50 = 262000 mg/m3/30M;
Inhalation, mouse: LC50 = 40000 mg/m3/4H;

LD50/LC50: Inhalation, rat: LC50 = 140700 mg/m3/1H;
Oral, mouse: LD50 = 2402 mg/kg;
Oral, mouse: LD50 = 2400 mg/kg;
Oral, rat: LD50 = 4920 mg/kg;
Skin, rabbit: LD50 = >20 gm/kg;
Skin, rabbit: LD50 = 20 mL/kg;
.

Other:

Carcinogenicity: Trichloroethylene - ACGIH: A2 - Suspected Human Carcinogen California: carcinogen, initial date 4/1/88 NTP: Suspect carcinogen IARC: Group 2A carcinogen

Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Ecotoxicity: Fish: Fathead Minnow: 41-67 mg/L; 96 hrs.; LC50
Daphnia: Daphnia: 2.2-100 mg/L; 48 hrs.; LC50
Mollusk Shrimp: 2 mg/L; 96 hrs.; LC50

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

US DOT

Shipping Name: TRICHLOROETHYLENE
Hazard Class: 6.1
UN Number: UN1710
Packing Group: III
Canada TDG
Shipping Name: TRICHLOROETHYLENE
Hazard Class: 6.1
UN Number: UN1710
Packing Group: III

USA RQ: CAS# 79-01-6: 100 lb final RQ; 45.4 kg final RQ

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: T

Risk Phrases:

R 45 May cause cancer.

R 36/38 Irritating to eyes and skin.

R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R 67 Vapours may cause drowsiness and dizziness.

R 68 Possible risk of irreversible effects.

Safety Phrases:

S 53 Avoid exposure - obtain special instructions before use.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

WGK (Water Danger/Protection)

CAS# 79-01-6: 3

Canada

CAS# 79-01-6 is listed on Canada's DSL List

Canadian WHMIS Classifications: D2A, D2B

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

CAS# 79-01-6 is listed on Canada's Ingredient Disclosure List

US Federal

TSCA

CAS# 79-01-6 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date: 2/01/1999

Revision #9 Date 6/03/2008

Revisions were made in Sections: 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

company has been advised of the possibility of such damages.
