

MATERIAL SAFETY DATA SHEET

Section 1 - Chemical Product and Company Identification

MSDS Name: 3% Trichloroacetic acid in 97% dichloromethane
Catalog Numbers: MECL97%/TCA3, NC9456223, NC9704402, XXTRIDMC4LI
Synonyms: None.
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#: 75-09-2
Chemical Name: Methylene chloride
%: 97
EINECS#: 200-838-9
Hazard Symbols: XN
Risk Phrases: 40

CAS#: 76-03-9
Chemical Name: Trichloroacetic acid
%: 3
EINECS#: 200-927-2
Hazard Symbols:
Risk Phrases:

Text for R-phrases: see Section 16

Hazard Symbols: XN



Risk Phrases: 40

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Danger! Corrosive. May be harmful if swallowed. This substance has caused adverse reproductive and fetal effects in animals. May cause central nervous system depression. May cause kidney damage. May cause blood abnormalities. Potential cancer hazard. Causes eye and skin irritation and possible burns.

Causes digestive and respiratory tract irritation with possible burns. Target Organs: Blood, kidneys, heart, central nervous system, liver, lungs, pancreas.

Potential Health Effects

Eye: Contact with eyes may cause severe irritation, and possible eye burns.

Skin: May be absorbed through the skin. Causes irritation with burning pain, itching, and redness. Prolonged exposure may result in skin burns.

- Ingestion:** Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May cause kidney damage. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure.
- Inhalation:** Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Causes respiratory tract irritation. May cause narcotic effects in high concentration. Vapors may cause dizziness or suffocation. May cause blood changes. Overexposure may cause an increase in carboxyhemoglobin levels in the blood. Can produce delayed pulmonary edema.
- Chronic:** Possible cancer hazard based on tests with laboratory animals. Prolonged or repeated skin contact may cause dermatitis. May cause reproductive and fetal effects. Laboratory experiments have resulted in mutagenic effects. Chronic exposure may cause lung, liver, and pancreatic tumors. May cause conjunctivitis and/or corneal burns.

Section 4 - First Aid Measures

- Eyes:** Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).
- Skin:** Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.
- Ingestion:** Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.
- Inhalation:** Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.
- Notes to Physician:** Treat symptomatically and supportively.

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. Use water spray to keep fire-exposed containers cool. Vapors mixed with air in proper proportion will propagate a flame. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Containers may explode when heated. Will form explosive mixtures in atmospheres having high oxygen contents.
- Extinguishing Media:** For small fires, use dry chemical, carbon dioxide, or water spray. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray. Cool containers with flooding quantities of water until well after fire is out.
- Autoignition Temperature:** 556 deg C (1,032.80 deg F)
- Flash Point:** Not applicable.
- Explosion Limits: Lower:** 13 vol %
- Explosion Limits: Upper:** 23 vol %
- NFPA Rating:** health: 2; flammability: 1; instability: 0;

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. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Loosen closure cautiously before opening. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Keep away from heat, sparks and flame. Do not ingest or inhale.

Storage: Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Store below 40°C. Keep away from active metals.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Methylene chloride	50 ppm	2300 ppm IDLH	25 ppm TWA (8 hr); 125 ppm (15 min); ppm Action (See 29 CFR 1910.1052)
Trichloroacetic acid listed	1 ppm	1 ppm TWA; 7 mg/m3 TWA	none

OSHA Vacated PELs: Methylene chloride: 500 ppm TWA Trichloroacetic acid: 1 ppm TWA; 7 mg/m3 TWA

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: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Color: colorless

Odor: ethereal odor - chloroform-like

pH: Not available

Vapor Pressure: 350 mm Hg @ 20
Vapor Density: 2.93 (Air=1)
Evaporation Rate: Not available
Viscosity: Not available
Boiling Point: 40 deg C (104.00°F)
Freezing/Melting Point: -97 deg C (-142.60°F)
Decomposition Temperature: Not available
Solubility in water: Moderately soluble in water
Specific Gravity/Density: 1.33 (Water=1)
Molecular Formula: CH₂Cl₂
Molecular Weight: 84.92

Section 10 - Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions. May form explosive mixtures in atmospheres having high oxygen content.

Conditions to Avoid: Incompatible materials, excess heat, strong oxidants, active metals.

Incompatibilities with Other Materials Strong oxidizing agents, liquid oxygen, nitric acid, potassium, lithium, sodium, caustics (e.g. ammonia, ammonium hydroxide, calcium hydroxide, potassium hydroxide, sodium hydroxide), potassium tert-butoxide, sodium potassium alloys, powdered aluminum, Active metals (such as potassium and magnesium), nitrogen tetroxide, N-methyl-N-nitrosourea + potassium hydroxide, powdered magnesium.

Hazardous Decomposition Products Hydrogen chloride, phosgene, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

Hazardous Polymerization Will not occur.

Section 11 - Toxicological Information

RTECS#: CAS# 75-09-2: PA8050000
CAS# 76-03-9: AJ7875000

LD50/LC50: RTECS:
CAS# 75-09-2: Draize test, rabbit, eye: 162 mg Moderate;
Draize test, rabbit, eye: 10 mg Mild;
Draize test, rabbit, eye: 500 mg/24H Mild;
Draize test, rabbit, skin: 810 mg/24H Severe;
Draize test, rabbit, skin: 100 mg/24H Moderate;
Inhalation, mouse: LC50 = 14400 ppm/7H;
Inhalation, mouse: LC50 = 49100 mg/m³/6H;
Inhalation, mouse: LC50 = 54000 mg/m³/2H;
Inhalation, mouse: LC50 = 56220 mg/m³/7H;
Inhalation, rat: LC50 = 52 gm/m³;
Inhalation, rat: LC50 = 76000 mg/m³/4H;
Inhalation, rat: LC50 = 52000 mg/m³/6H;
Oral, mouse: LD50 = 873 mg/kg;
Oral, rabbit: LD50 = 2000 mg/kg;
Oral, rat: LD50 = 1600 mg/kg;
Oral, rat: LD50 = 985 mg/kg;

RTECS:
CAS# 76-03-9: Draize test, rabbit, eye: 3500 ug/5S Severe;
Draize test, rabbit, skin: 210 ug Mild;

Carcinogenicity: Methylene chloride - ACGIH: A3 - Confirmed animal carcinogen with unknown relevance to humans California: carcinogen, initial date 4/1/88 NTP: Suspect carcinogen IARC: Group 2B carcinogen
Trichloroacetic acid - ACGIH: A3 - Confirmed animal carcinogen with unknown relevance to humans IARC: Group 3 (not classifiable)

Epidemiology: IARC has determined there is sufficient evidence for carcinogenicity to animals but limited evidence for carcinogenicity to humans.
Teratogenicity: Not available
Reproductive: Adverse reproductive effects have occurred in experimental animals.
Neurotoxicity: No information found
Mutagenicity: Not available
Other: Standard Draize Test: Administration into the eye (rabbit) = 10 mg (mild) Standard Draize Test: Administration onto the skin (rabbit) = 810 mg/24H (Severe). Standard Draize Test: Administration onto the skin (rabbit) = 100 mg/24H (Moderate). Standard Draize Test: Administration onto the eye (rabbit) = 162 mg (Moderate).

Section 12 - Ecological Information

Ecotoxicity: Fish: Bluegill/Sunfish: 230mg/L; 24H; Static
Fish: Fathead Minnow: 196mg/L; 96H

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification. RCRA P-Series: None listed. RCRA U-Series: CAS# 75-09-2: waste number U080.

Section 14 - Transport Information

US DOT
Shipping Name: Not regulated as a hazardous material
Hazard Class:
UN Number:
Packing Group:
Canada TDG
Shipping Name: Not available
Hazard Class:
UN Number:
Packing Group:
USA RQ: CAS# 75-09-2: 1000 lb final RQ; 454 kg final RQ

Section 15 - Regulatory Information

US Federal

TSCA

CAS# 75-09-2 is listed on the TSCA Inventory.

CAS# 76-03-9 is listed on the TSCA Inventory.

Health & Safety Reporting List

CAS# 75-09-2: Effective 10/4/82, Sunset 10/4/92

Chemical Test Rules Section 12b

None of the chemicals in this product are under a Chemical Test Rule.

TSCA Significant New Use Rule

None of the chemicals are listed under TSCA Section 12b.

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

CAS# 75-09-2: 1000 lb final RQ; 454 kg final RQ

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 75-09-2: acute, chronic. CAS # 76-03-9: acute.

Section 313 This material contains Methylene chloride (CAS# 75-09-2, 97%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 372.

Clean Air Act: CAS# 75-09-2 is listed as a hazardous air pollutant (HAP). This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.

Clean Water Act: None of the chemicals in this product are listed as Hazardous Substances under the CWA. CAS# 75-09-2 is listed as a Priority Pollutant under the Clean Water Act. CAS# 75-09-2 is listed as a Toxic Pollutant under the Clean Water Act.

**OSHA:
STATE**

Methylene chloride can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
Trichloroacetic acid can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65 The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act: WARNING: This product contains Methylene chloride, a chemical known to the state of California to cause cancer.

California No Significant Risk Level: CAS# 75-09-2: 200 µg/day NSRL (inhalation); 50 µg/day NSRL (except inhalation)

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN

Risk Phrases:

R 40 Limited evidence of a carcinogenic effect.

Safety Phrases:

S 24/25 Avoid contact with skin and eyes.

S 36/37 Wear suitable protective clothing and gloves.

WGK (Water Danger/Protection)

CAS# 75-09-2: 2

CAS# 76-03-9: 2

Canada

CAS# 75-09-2 is listed on Canada's DSL List

CAS# 76-03-9 is listed on Canada's DSL List

Canadian WHMIS Classifications: E, D2A

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# 75-09-2 is listed on Canada's Ingredient Disclosure List

CAS# 76-03-9 is listed on Canada's Ingredient Disclosure List

Section 16 - Other Information

MSDS Creation Date: 4/23/1998

Revision #8 Date 10/03/2005

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the

company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.