

Material Safety Data Sheet

Version 4.0
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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Trichloroethylene

Product Number : 251402

Brand : Sigma-Aldrich

Company : Sigma-Aldrich Canada, Ltd
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CANADA

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2. HAZARDS IDENTIFICATION

Emergency Overview

Target Organs

Liver, Central nervous system, Heart, Lungs

WHMIS Classification

D1B	Toxic Material Causing Immediate and	Toxic
D2A	Serious Toxic Effects	Carcinogen
D2B		Moderate skin irritant
		Moderate eye irritant
		Mutagen

GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H303	May be harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H371	May cause damage to organs.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P201	Obtain special instructions before use.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.
P281	Use personal protective equipment as required.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/attention.

HMIS Classification

Health hazard: 2

Chronic Health Hazard: *

Flammability: 0

Physical hazards: 1

Potential Health Effects

Inhalation May be harmful if inhaled. Causes respiratory tract irritation. Vapours may cause drowsiness and dizziness.

Skin May be harmful if absorbed through skin. Causes skin irritation.

Eyes Causes eye irritation.

Ingestion May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : TCE
Trichloroethene

Formula : C_2HCl_3
Molecular Weight : 131.39 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Trichloroethylene			
79-01-6	201-167-4	602-027-00-9	-

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid inhalation of vapour or mist.

Normal measures for preventive fire protection.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Light sensitive. Handle and store under inert gas.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Update	Basis
Trichloroethylene	79-01-6	TWA	10 ppm	2007-07-06	Canada. British Columbia OEL
Remarks	IARC "2A" applies to substances deemed probably carcinogenic to humans on the basis of limited evidence of carcinogenicity in humans. ACGIH "A2" applies to those substances that are considered suspected human carcinogens.				
		STEL	25 ppm	2007-07-06	Canada. British Columbia OEL
	IARC "2A" applies to substances deemed probably carcinogenic to humans on the basis of limited evidence of carcinogenicity in humans. ACGIH "A2" applies to those substances that are considered suspected human carcinogens.				
		TWAE V	10 ppm	2008-07-16	Canada. Ontario OELs
		STEV	25 ppm	2008-07-16	Canada. Ontario OELs
		STEL	100 ppm 537 mg/m3	2007-01-01	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TWA	50 ppm 269 mg/m3	2007-01-01	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TWAE V	50 ppm 269 mg/m3	2006-12-29	Canada. Quebec OELs
		STEV	200 ppm 1,070 mg/m3	2006-12-29	Canada. Quebec OELs

Personal protective equipment**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves.

Eye protection

Safety glasses with side-shields conforming to EN166

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES**Appearance**

Form liquid, clear

Colour colourless

Safety data

pH no data available
Melting point -84.8 °C (-120.6 °F) - lit.
Boiling point 86.7 °C (188.1 °F) - lit.
Flash point no data available
Ignition temperature 410 °C (770 °F) -
Lower explosion limit 8 %(V)
Upper explosion limit 10.5 %(V)
Vapour pressure 81.3 hPa (61.0 mmHg) at 20.0 °C (68.0 °F)
Density 1.463 g/mL at 25 °C (77 °F)
Water solubility no data available
Partition coefficient: log Pow: 2.29
n-octanol/water

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Conditions to avoid

no data available

Materials to avoid

Oxidizing agents, Strong bases, Magnesium

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 4,920 mg/kg

LC50 Inhalation - mouse - 4 h - 8450 ppm

LD50 Dermal - rabbit - > 20,000 mg/kg

Skin corrosion/irritation

Skin - rabbit - Severe skin irritation - 24 h

Serious eye damage/eye irritation

Eyes - rabbit - Eye irritation - 24 h

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

Laboratory experiments have shown mutagenic effects.
In vitro tests showed mutagenic effects

Carcinogenicity

This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

Possible human carcinogen

IARC: 2A - Group 2A: Probably carcinogenic to humans (Trichloroethylene)

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure (GHS)

May cause damage to organs.

Specific target organ toxicity - repeated exposure (GHS)

no data available

Aspiration hazard

no data available

Potential health effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation. Vapours may cause drowsiness and dizziness.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.

Signs and Symptoms of Exposure

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Exposure to and/or consumption of alcohol may increase toxic effects., Gastrointestinal disturbance, Kidney injury may occur., narcosis

Additional Information

RTECS: KX4550000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 41 mg/l - 96.0 h LOEC - other fish - 11 mg/l - 10.0 d NOEC - Oryzias latipes - 40 mg/l - 10.0 d
Toxicity to daphnia and other aquatic invertebrates.	EC50 - Daphnia magna (Water flea) - 18.00 mg/l - 48 h
Toxicity to algae	IC50 - Pseudokirchneriella subcapitata (green algae) - 175.00 mg/l - 96 h

Persistence and degradability

Bioaccumulative potential

Does not bioaccumulate.

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

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

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13. DISPOSAL CONSIDERATIONS

Product

Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION**DOT (US)**

UN-Number: 1710 Class: 6.1 Packing group: III
Proper shipping name: Trichloroethylene
Reportable Quantity (RQ): 100 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG

UN-Number: 1710 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: TRICHLOROETHYLENE
Marine pollutant: No

IATA

UN-Number: 1710 Class: 6.1 Packing group: III
Proper shipping name: Trichloroethylene

15. REGULATORY INFORMATION**DSL Status**

All components of this product are on the Canadian DSL list.

WHMIS Classification

D1B	Toxic Material Causing Immediate and	Toxic
D2A	Serious Toxic Effects	Carcinogen
D2B		Moderate skin irritant
		Moderate eye irritant
		Mutagen

16. OTHER INFORMATION**Further information**

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