

Material Safety Data Sheet

Version 3.0
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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 1,2,4-Trichlorobenzene

Product Number : 296104
Brand : Sigma-Aldrich

Company : Sigma-Aldrich Canada, Ltd
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CANADA

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2. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : C₆H₃Cl₃

CAS-No.	EC-No.	Index-No.	Concentration
1,2,4-Trichlorobenzene			
120-82-1	204-428-0	602-087-00-6	>= 99 %
1,2,3-Trichlorobenzene			
87-61-6	201-757-1	-	>= 0.5 %
1,4-Dichlorobenzene			
106-46-7	203-400-5	602-035-00-2	>= 0.2 %

3. HAZARDS IDENTIFICATION**Emergency Overview****Target Organs**

Liver, Kidney, Blood, Nerves.

WHMIS Classification

D1B Toxic Material Causing Immediate and
D2A Serious Toxic Effects
D2B

Toxic by ingestion
Carcinogen
Moderate skin irritant

HMIS Classification

Health Hazard: 2
Chronic Health Hazard: *
Flammability: 1
Physical hazards: 0

Potential Health Effects

Inhalation
Skin
Eyes
Ingestion

May be harmful if inhaled. Causes respiratory tract irritation.
May be harmful if absorbed through skin. Causes skin irritation.
Causes eye irritation.
Toxic if swallowed.

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

Flammable properties

Flash point 110.0 °C (230.0 °F) - closed cup

Ignition temperature 571 °C (1,060 °F)

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.

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 for 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

Handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Normal measures for preventive fire protection.

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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis
1,2,4-Trichlorobenzene	120-82-1	C	5 ppm	2006-11-29	Canada. British Columbia OEL
		CEV	5 ppm 37 mg/m3	2005-12-17	Canada. Ontario OELs
		(c)	5 ppm 37 mg/m3	2007-01-01	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
Remarks	Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required				
		C	5 ppm 37 mg/m3	2006-12-29	Canada. Quebec OELs
	A substance which may not be recirculated in accordance with section 108				
1,4-Dichlorobenzene	106-46-7	TWA	10 ppm	2006-11-29	Canada. British Columbia OEL
Remarks	IARC "2B" applies to substances deemed possibly carcinogenic to humans.				
		TWAE V	10 ppm	2005-12-17	Canada. Ontario OELs
		TWA	10 ppm 60 mg/m3	2007-01-01	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TWAE V	20 ppm 120 mg/m3	2006-12-29	Canada. Quebec OELs
	Carcinogenic effect detected in animals. Results of studies relating to the carcinogenicity of these substances in animals are not necessarily applicable to humans.				

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

Face shield and safety glasses

Skin and body protection

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

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid, clear
Colour	colourless

Safety data

pH	no data available
Melting point	16.0 °C (60.8 °F)
Boiling point	214.0 °C (417.2 °F)
Flash point	110.0 °C (230.0 °F) - closed cup
Ignition temperature	571 °C (1,060 °F)
Lower explosion limit	2.5 %(V)
Upper explosion limit	6.6 %(V)
Vapour pressure	1.3 hPa (1.0 mmHg) at 40.0 °C (104.0 °F)
Density	1.45 g/cm ³
Water solubility	insoluble
Partition coefficient: n-octanol/water	log Pow: 4.00

10. STABILITY AND REACTIVITY

Storage stability

Stable under recommended storage conditions.

Materials to avoid

Strong oxidizing agents

Hazardous decomposition products

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

11. TOXICOLOGICAL INFORMATION

Acute toxicity

no data available

Irritation and corrosion

no data available

Sensitisation

no data available

Chronic exposure

IARC: 2B - Group 2B: Possibly carcinogenic to humans (1,4-Dichlorobenzene)

Potential Health Effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.

Ingestion
Target Organs

Toxic if swallowed.
Liver, Kidney, Blood, Nerves.,

Additional Information
RTECS: DC2100000

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

no data available

Ecotoxicity effects

no data available

Further information on ecology

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

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

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: 2321 Class: 6.1 Packing group: III
Proper shipping name: Trichlorobenzenes, liquid
Marine pollutant: Marine pollutant
Poison Inhalation Hazard: No

IMDG

UN-Number: 2321 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: TRICHLOROBENZENES, LIQUID
Marine pollutant: Marine pollutant

IATA

UN-Number: 2321 Class: 6.1 Packing group: III
Proper shipping name: Trichlorobenzenes, liquid

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 by ingestion
D2A	Serious Toxic Effects	Carcinogen
D2B		Moderate skin irritant

16. OTHER INFORMATION

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.