

Chloroform

SECTION 1. IDENTIFICATION

Product Identifier	Chloroform
Other Means of Identification	Methyl trichloride, Trichloromethane
Product Code(s)	CH3010, CH3020, CH3021, CH3050, CH3060
Product Family	Organic solution
Recommended Use	Laboratory.
Restrictions on Use	None known.
Supplier Identifier	Alphachem Limited, 2485 Milltower Court, Mississauga, Ontario, L5N 5Z6, (905) 821-2995
Emergency Phone No.	CANUTEC CANADA, 613-996-6666, 24 Hours
SDS No.	0248

SECTION 2. HAZARD IDENTIFICATION

Classified according to Canada's Hazardous Products Regulations (WHMIS 2015) and the US Hazard Communication Standard (HCS 2012).

Classification

Acute toxicity (Oral) - Category 4; Acute toxicity (Inhalation) - Category 3; Skin irritation - Category 2; Eye irritation - Category 2A; Carcinogenicity - Category 2; Specific target organ toxicity (single exposure) - Category 2

Label Elements



Signal Word:
Danger

Hazard Statement(s):

Harmful if swallowed.
Causes skin irritation.
Suspected of causing cancer.
May cause damage to organs through prolonged or repeated exposure.

Precautionary Statement(s):

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wash hands and skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN: Wash with plenty of water/
If skin irritation occurs: Get medical advice/attention.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF exposed or concerned: Get medical advice/attention.

Other Hazards

May be a health hazard in confined spaces.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture:

Chemical Name	CAS No.	%	Other Identifiers
Chloroform	67-66-3	>99	Methyl trichloride, Trichloromethane
Ethanol	64-17-5	<1	Ethyl Alcohol

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Remove source of exposure or move to fresh air. Move to fresh air. Keep at rest in a position comfortable for breathing. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by Poison Centre or doctor. Immediately call a Poison Centre or doctor.

Skin Contact

Immediately rinse with lukewarm, gently flowing water for 15-20 minutes. If skin irritation occurs, get medical advice or attention.

Eye Contact

Avoid direct contact. Wear chemical protective gloves if necessary. Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for at least 30 minutes, while holding the eyelid(s) open. Remove contact lenses, if present and easy to do. If eye irritation persists, get medical advice or attention.

Ingestion

Do not induce vomiting. Rinse mouth with water. If vomiting occurs naturally, lie on your side in the recovery position. Rinse mouth with water again.

First-aid Comments

Some of the first-aid procedures recommended here require advanced first-aid training. If exposed or concerned, get medical advice or attention.

Most Important Symptoms and Effects, Acute and Delayed

Can harm the kidneys. Can harm the liver.

Immediate Medical Attention and Special Treatment

Special Instructions

General advice

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

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Not combustible. Use extinguishing agent suitable for surrounding fire.

Unsuitable Extinguishing Media

None known.

Specific Hazards Arising from the Product

Does not burn. Heating increases the release of toxic vapour. Closed containers may rupture violently when heated

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releasing contents.

In a fire, the following hazardous materials may be generated: corrosive chlorine; corrosive hydrogen chloride; corrosive phosgene.

Special Protective Equipment and Precautions for Fire-fighters

Evacuate area. Approach fire from upwind to avoid hazardous vapours or gases. For a massive fire, immediately evacuate the area and use unmanned hose holder or monitor nozzles.

Fire-fighters should enter area wearing specialized protective equipment. (Bunker Gear will not provide adequate protection.) a full-body encapsulating chemical protective suit with positive pressure SCBA may be necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Emergency responders: evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Use the personal protective equipment recommended in Section 8 of this safety data sheet. Increase ventilation to area or move leaking container to a well-ventilated and secure area. Remove or isolate incompatible materials as well as other hazardous materials. Do not touch damaged containers or spilled product unless wearing appropriate protective equipment.

Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway. If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas.

Methods and Materials for Containment and Cleaning Up

Small spills or leaks: stop or reduce leak if safe to do so. Contain and soak up spill with absorbent that does not react with spilled product. Place used absorbent into suitable, covered, labelled containers for disposal. Large spills or leaks: remove or recover liquid using pumps or vacuum equipment. Flush spill area. Large spills or leaks: contact emergency services and manufacturer/supplier for advice.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Obtain special instructions before use. Wear personal protective equipment to avoid direct contact with this chemical. Prevent accidental contact with incompatible chemicals. Do not get in eyes, on skin or on clothing. Avoid breathing in this product. Immediately report leaks, spills or failures of the safety equipment (e.g. ventilation system). Only use where there is adequate ventilation. Avoid generating dusts. Avoid generating vapours or mists. Keep containers tightly closed when not in use or empty.

Conditions for Safe Storage

Store in an area that is: cool, dry, well-ventilated, out of direct sunlight and away from heat and ignition sources, an approved, fire-resistant area. Keep amount in storage to a minimum. Separate from incompatible materials (see Section 10: Stability and Reactivity). Protect from conditions listed in Conditions to Avoid in Section 10 (Stability and Reactivity).

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Chemical Name	ACGIH TLV®		OSHA PEL		AIHA WEEL	
	TWA	STEL	TWA	Ceiling	8-hr TWA	TWA
Chloroform	10 ppm A3		2 ppm			
Ethanol		1000 ppm A3	Not established			

ACGIH® = American Conference of Governmental Industrial Hygienists. TWA = Time-Weighted Average.

TLV® = Threshold Limit Value.

TLV® = Threshold Limit Value. A3 = Animal carcinogen.

OSHA = US Occupational Safety and Health Administration.

PEL = Permissible Exposure Limits.

Appropriate Engineering Controls

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Use local exhaust ventilation and enclosure, if necessary, to control amount in the air. Use backup controls (e.g. double mechanical pump seals) to prevent the release of this material due to equipment failure. Exhaust directly to the outside, taking any necessary precautions for environmental protection.

Individual Protection Measures

Eye/Face Protection

Wear chemical safety goggles and face shield when contact is possible.

Skin Protection

Wear chemical protective clothing e.g. gloves, aprons, boots.

Suitable materials are: polyvinyl alcohol, Viton®, Silver Shield/4H® (PE/EVAL/PE), Trellech® HPS, Trellech® VPS, Tychem® BR/LV, Tychem® Responder.

The following materials should NOT be used: butyl rubber, natural rubber, neoprene rubber, nitrile rubber, polyvinyl chloride, Barrier® (PE/PA/PE).

Respiratory Protection

Wear a NIOSH approved air-purifying respirator with an organic vapour cartridge, wear a NIOSH approved air-purifying respirator with an appropriate cartridge.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Clear colourless liquid.
Odour	Ethereal
Odour Threshold	133 - 276 ppm (detection)
pH	Not available
Melting Point/Freezing Point	-63.5 °C (-82.3 °F) (melting); Not available (freezing)
Initial Boiling Point/Range	61.3 °C (142.3 °F)
Flash Point	Not available
Evaporation Rate	Not available
Flammability (solid, gas)	Not available
Upper/Lower Flammability or Explosive Limit	Not applicable (upper); Not applicable (lower)
Vapour Pressure	21.28 kPa (159.60 mm Hg)
Vapour Density (air = 1)	4.12
Relative Density (water = 1)	1.484 at 20 °C
Solubility	Slightly soluble in water; Soluble in all proportions in common organic solvents.
Partition Coefficient, n-Octanol/Water (Log Kow)	1.97
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
Viscosity	0.379 mm ² /s at 20 °C (kinematic); 0.563 mPa.s at 20 °C (dynamic)

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Heating may cause an explosion.

Chemical Stability

Normally stable.

Possibility of Hazardous Reactions

Decomposes violently in the presence of air, light. Reacts in the presence of alkaline conditions (high pH).

Conditions to Avoid

Exposure to air. Light. Temperatures above 290.0 °C (554.0 °F)

Incompatible Materials

Strong oxidizing agents (e.g. perchloric acid), metals (e.g. aluminum), alcohols (e.g. ethanol).

Hazardous Decomposition Products

Corrosive chlorine; corrosive hydrogen chloride; corrosive phosgene.

SECTION 11. TOXICOLOGICAL INFORMATION**Likely Routes of Exposure**

Inhalation; skin contact; eye contact; ingestion.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Chloroform	2265 ppm (rat) (4-hour exposure)	908 mg/kg (rat)	
Ethanol	> 32380 ppm (male rat) (4-hour exposure)	7060 mg/kg (male rat)	> 15800 mg/kg (rabbit)

LC50: No information was located.

LD50 (oral): No information was located.

LD50 (dermal): No information was located.

Skin Corrosion/Irritation

May cause moderate or severe irritation based on information for closely related materials.

Serious Eye Damage/Irritation

May cause serious eye irritation based on information for closely related materials.

STOT (Specific Target Organ Toxicity) - Single Exposure**Inhalation**

Toxic, can cause death Causes depression of the central nervous system, harmful effects on the kidneys, harmful effects on the liver.

Skin Absorption

No information was located.

Ingestion

Harmful

Causes severe irritation or burns to the mouth, throat and stomach, depression of the central nervous system. Symptoms may include headache, nausea, dizziness, drowsiness and confusion. Harmful effects on the liver, harmful effects on the kidneys.

Aspiration Hazard

No information was located.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

Causes

Harmful effects on the central nervous system, harmful effects on the kidneys, harmful effects on the liver.

Respiratory and/or Skin Sensitization

No information was located for respiratory sensitization. No information was located for skin sensitization.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Chloroform	Group 2B	A3	Reasonably anticipated	Not Listed
Ethanol	Group 1	Not Listed	Known carcinogen	

Key to Abbreviations

IARC = International Agency for Research on Cancer. Group 2B = Possibly carcinogenic to humans.

ACGIH® = American Conference of Governmental Industrial Hygienists. A3 = Animal carcinogen.

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NTP = National Toxicology Program.

OSHA = US Occupational Safety and Health Administration.

Reproductive Toxicity

Development of Offspring

Not known to harm the unborn child.

Sexual Function and Fertility

Conclusions cannot be drawn from the limited studies available.

Effects on or via Lactation

No information was located.

Germ Cell Mutagenicity

Conclusions cannot be drawn from the limited studies available.

Interactive Effects

No information was located.

SECTION 12. ECOLOGICAL INFORMATION

This section is not required by WHMIS. This section is not required by OSHA HCS 2012.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose of contents and container in accordance with local, regional, national and international regulations.

SECTION 14. TRANSPORT INFORMATION

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
Canadian TDG	UN1888	CHLOROFORM	6.1	II
US DOT	UN1888	CHLOROFORM	6.1	II

Environmental Hazards Environmentally Hazardous Substance

Special Precautions Not applicable

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

Canada

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

Listed on the DSL.

USA

Toxic Substances Control Act (TSCA) Section 8(b)

Listed on the TSCA Inventory.

SECTION 16. OTHER INFORMATION

NFPA Rating	Health - 2	Flammability - 0	Instability - 0
SDS Prepared By	Alphachem Limited		
Phone No.	(905)-821-2995		
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References CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS). CSST - Repertoire toxicologique database.

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