

## Chloroform

### 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Chloroform

**Synonyms/Generic Names:** Trichloromethane; Methylidyne Trichloride

**SDS Number:** 182.00

**Product Use:** For Educational Use Only

**Manufacturer:** Columbus Chemical Industries, Inc.  
N4335 Temkin Rd.  
Columbus, WI. 53925

**For More Information Contact:** Ward's Science  
5100 West Henrietta Rd.  
PO Box 92912-9012  
Rochester, NY 14692  
(800) 962-2660 (Monday-Friday 7:30-7:00 Eastern Time)

**In Case of Emergency Call:** CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

### 2. HAZARDS IDENTIFICATION

**OSHA Hazards:** Carcinogen, Target organ effect, Harmful by ingestion, Irritant

**Target Organs:** Central nervous system, Blood, Liver, Cardiovascular system, Kidney

**Signal Words:** Warning

**Pictograms:**



**GHS Classification:**

Acute toxicity, Oral	Category 4
Skin irritation	Category 2
Eye irritation	Category 2A
Carcinogenicity	Category 2
Specific target organ toxicity – repeated exposure	Category 2
Acute aquatic toxicity	Category 3

**GHS Label Elements, including precautionary statements:**

**Hazard Statements:**

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H351	Suspected of causing cancer.

H373	May cause damage to organs through prolonged or repeated exposure.
H402	Harmful to aquatic life.

**Precautionary Statements:**

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 so. Continue rinsing.

**Potential Health Effects**

<b>Eyes</b>	Causes eye irritation.
<b>Inhalation</b>	May be harmful if inhaled. Causes respiratory tract irritation.
<b>Skin</b>	Harmful if absorbed through skin. Causes skin irritation.
<b>Ingestion</b>	Harmful if swallowed.

**NFPA Ratings**

<b>Health</b>	2
<b>Flammability</b>	0
<b>Reactivity</b>	0
<b>Specific hazard</b>	Not Available

**HMIS Ratings**

<b>Health</b>	2
<b>Fire</b>	0
<b>Reactivity</b>	0
<b>Personal</b>	H

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Chloroform	100	67-66-3	200-663-8	CHCl <sub>3</sub>	119.38 g/mol

**4. FIRST-AID MEASURES**

<b>Eyes</b>	In case of eye contact, rinse with plenty of water and seek medical attention.
<b>Inhalation</b>	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
<b>Skin</b>	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention.
<b>Ingestion</b>	<b>Do Not Induce Vomiting!</b> Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention.

**5. FIRE-FIGHTING MEASURES**

<b>Suitable (and unsuitable) extinguishing media</b>	Product is not flammable. Use appropriate media for adjacent fire. Cool unopened containers with water.
<b>Special protective equipment and precautions for firefighters</b>	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.
<b>Specific hazards arising from the chemical</b>	Emits toxic fumes(carbon oxides, phosgene, hydrogen chloride gas) under fire conditions. (See also Stability and Reactivity section).

**6. ACCIDENTAL RELEASE MEASURES**

<b>Personal precautions, protective equipment and emergency procedures</b>	See section 8 for recommendations on the use of personal protective equipment.
<b>Environmental precautions</b>	Prevent spillage from entering drains. Any release to the environment

	may be subject to federal/national or local reporting requirements.
<b>Methods and materials for containment and cleaning up</b>	Neutralize spill with sodium bicarbonate or lime. Absorb spill with noncombustible absorbent material, then place in a suitable container for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations.

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## 7. HANDLING AND STORAGE

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### Precautions for safe handling

See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Avoid formation of dusts.

### Conditions for safe storage, including any incompatibilities

Store in cool, dry well ventilated area. Keep away from incompatible materials (see section 10 for incompatibilities).

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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### Occupational exposure controls:

Component	Exposure Limits	Basis	Entity
Chloroform	10 ppm 49 mg/m <sup>3</sup>	TLV	ACGIH
	50 ppm 240 mg/m <sup>3</sup>	CEIL	OSHA
	2 ppm 9.78 mg/m <sup>3</sup>	STEL (60 minutes)	NIOSH

TWA: Time Weighted Average over 8 hours of work.

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit during x minutes.

IDLH: Immediately Dangerous to Life or Health

WEEL: Workplace Environmental Exposure Levels

CEIL: Ceiling

### Personal Protection

<b>Eyes</b>	Wear chemical safety glasses or goggles with a face shield.
<b>Inhalation</b>	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.
<b>Skin</b>	Wear nitrile or rubber gloves, apron or lab coat.
<b>Other</b>	Not Available

### Other Recommendations

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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Appearance (physical state, color, etc.)	Clear, colorless, liquid
Odor	Mild, sweet odor.
Odor threshold	85 ppm
pH	Not Available
Melting point/freezing point	-63°C (-81°F)
Initial boiling point and boiling range	60.5-61.5°C (140.9-142.7°F)
Flash point	Not Flammable
Evaporation rate	11.6
Flammability (solid, gas)	Not Flammable
Upper/lower flammability or explosive limit	Not Flammable
Vapor pressure	213.3 hPa (160.0 mmHg) at 20.0°C (68.0°F)
Vapor density	4.13 (air=1)
Relative density	Not Available
Solubility (ies)	Slightly soluble in water.
Partition coefficient: n-octanol/water	Log Pow: 1.97
Auto-ignition temperature	Not Available
Decomposition temperature	Not Available

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## 10. STABILITY AND REACTIVITY

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<b>Chemical Stability</b>	Stable
<b>Possibility of Hazardous Reactions</b>	Will not occur.
<b>Conditions to Avoid</b>	Exposure to air and light.
<b>Incompatible Materials</b>	Strong oxidizing agents, strong bases, magnesium, sodium, lithium.
<b>Hazardous Decomposition Products</b>	Carbon oxides, phosgene, hydrogen chloride gas.

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## 11. TOXICOLOGICAL INFORMATION

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### Acute Toxicity

<b>Skin</b>	LD50 Dermal – rabbit - >20,000 mg/kg
<b>Eyes</b>	Eyes – rabbit – Irritating to eyes – 24 hours
<b>Respiratory</b>	LC50 Inhalation – rat – 4 hours – 47,702 mg/m <sup>3</sup>
<b>Ingestion</b>	LD50 Oral – rat – 695.0 mg/kg

### Carcinogenicity

<b>IARC</b>	2B: Possibly carcinogenic to humans (chloroform).
<b>ACGIH</b>	A3: Confirmed animal carcinogen with unknown relevance to humans (chloroform).
<b>NTP</b>	Reasonably anticipated to be a human carcinogen (chloroform).
<b>OSHA</b>	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

### Signs & Symptoms of Exposure

<b>Skin</b>	Redness, Itching.
<b>Eyes</b>	Redness, tearing, itching, burning, conjunctivitis.
<b>Respiratory</b>	Irritation of mucous membranes, coughing, wheezing, shortness of breath, loss of consciousness.
<b>Ingestion</b>	Irritation and burning sensations of mouth and throat, nausea, vomiting, and abdominal pain.

<b>Chronic Toxicity</b>	May cause adverse reproductive effects.
<b>Teratogenicity</b>	Not Available
<b>Mutagenicity</b>	Laboratory experiments have shown mutagenic effects.
<b>Embryotoxicity</b>	Not Available
<b>Specific Target Organ Toxicity</b>	May cause damage to organs through prolonged or repeated exposure.

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## 12. ECOLOGICAL INFORMATION

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### Ecotoxicity

<b>Aquatic Vertebrate</b>	LC50 – Leuciscus idus (Golden orfe) – 162 mg/l – 48 hours LC100 – Leuciscus idus (Golden orfe) – 220 mg/l – 48 hours LC50 – Other fish – 97 mg/l – 96 hours LC50 – Danio rerio (Zebra fish) – 121 mg/l – 96 hours NOEC – Oryzias latipes – 122 mg/l – 10 days NOEC – Oncorhynchus mykiss (Rainbow trout) – 24 mg/l – 96 hours LC50 – Trout – 43.8 mg/l – 96 hours
<b>Aquatic Invertebrate</b>	EC50 – Daphnia magna (Water flea) – 79.00 mg/l – 24 hours Immobilization EC50 – Daphnia magna (Water flea) – 51.6 mg/l – 48 hours NOEC – Daphnia magna (Water Flea) – 120 mg/l – 11 days
<b>Terrestrial</b>	EC50 – No information available – 500.00 mg/l – 24 hours

<b>Persistence and Degradability</b>	Not Available
<b>Bioaccumulative Potential</b>	Lepomis Macrochirus (Bluegill) – 14 days Bioconcentration factor (BCF): 6
<b>Mobility in Soil</b>	Not Available
<b>PBT and vPvB Assessment</b>	Not Available
<b>Other Adverse Effects</b>	Harmful to aquatic life.

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## 13. DISPOSAL CONSIDERATIONS

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<b>Waste Residues</b>	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste products or residues.
<b>Product Containers</b>	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

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## 14. TRANSPORTATION INFORMATION

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US DOT	UN1888, Chloroform, 6.1, pg III
TDG	UN1888, CHLOROFORM, 6.1, pg III
IMDG	UN1888, CHLOROFORM, 6.1, pg III
Marine Pollutant	No
IATA/ICAO	UN1888, Chloroform, 6.1, pg III

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## 15. REGULATORY INFORMATION

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TSCA Inventory Status	All ingredients are listed on the TSCA inventory.
DSCL (EEC)	All ingredients are listed on the DSCL inventory.
California Proposition 65	Listed: Chloroform
SARA 302	Listed: Chloroform
SARA 304	Listed: Chloroform
SARA 311	Chloroform
SARA 312	Chloroform
SARA 313	Listed: Chloroform
WHMIS Canada	Class D-1A: Very toxic material causing immediate and serious toxic effects. Class D-2A: Very toxic material causing other toxic effects.

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## 16. OTHER INFORMATION

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Revision	Date
Revision 1	01/07/2013

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