



Material Safety Data Sheet Chloroform, ACS

Section 1 - Chemical Product and Company Identification

MSDS Name:

Chloroform, ACS

Catalog Numbers:

LC13040

Synonyms:

None

Company Identification:

LabChem Inc
200 William Pitt Way
Pittsburgh, PA 15238

Company Phone Number:

(412) 826-5230

Emergency Phone Number:

(800) 424-9300

CHEMTREC Phone Number:

(800) 424-9300

Section 2 – Composition, Information on Ingredients

CAS#	Chemical Name:	Percent
67-66-3	Chloroform	99.25
64-17-5	Ethyl alcohol	0.75

Section 3 - Hazards Identification

Emergency Overview

Appearance: *Clear, colorless solution*

Warning! Causes eye, skin, and respiratory tract irritation. May be harmful if swallowed or inhaled. May cause central nervous system depression. May cause cancer based on animal studies. May cause cardiac disturbances. This substance has caused adverse reproductive and fetal effects in animals. Light sensitive.

Target Organs: Kidneys, heart, central nervous system, liver, eyes, reproductive system, skin.

Potential Health Effects

Eye:

Causes eye irritation, possibly severe.

Skin:

Causes moderate to severe skin irritation. May be absorbed through the skin in harmful amounts. Chloroform can be absorbed through the skin, based on animal information. Corrosive effects have been observed, but only following prolonged application, like for 24 hours.



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Ingestion:

Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May cause liver damage. May cause cardiac disturbances. Aspiration of material into the lungs may cause chemical pneumonitis, which may be fatal. May cause hallucinations and distorted perceptions.

Inhalation:

May cause liver and kidney damage. May cause cardiac sensitization and possible failure. Exposure produces central nervous system depression. Inhalation of large amounts may cause respiratory stimulation, followed by respiratory depression, convulsions and possible death due to respiratory paralysis. Causes irritation of the mucous membrane and upper respiratory tract. Harmful effects on the liver and kidneys, and some deaths, have been reported from historical use of chloroform as an anesthetic agent, at concentrations between 8000 and 20000 ppm.

Chronic:

Possible cancer hazard based on tests with laboratory animals. Prolonged or repeated skin contact may cause defatting and dermatitis. May cause reproductive and fetal effects. Laboratory experiments have resulted in mutagenic effects. Toxicity may be increased by exposure to alcohol, steroids, and ketones. Prolonged exposure may cause liver, kidney, and heart damage.

Section 4 - First Aid Measures

Eyes:

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid at once. Do NOT allow victim to rub or keep eyes closed.

Skin:

Get medical aid at once. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion:

Potential for aspiration if swallowed. Get medical aid immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs naturally, have victim lean forward.

Inhalation:

Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:

Causes cardiac sensitization to endogenous catecholamines, which may lead to cardiac arrhythmias. Do NOT use adrenergic agents such as epinephrine or pseudoepinephrine. Persons with liver, kidney, or central nervous system diseases may be at increased risk from exposure to this product. Alcoholic beverage consumption may enhance the toxic effects of this substance. Effects may be delayed.

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. Material will not burn. Vapors may accumulate in confined spaces. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Chloroform can decompose at high temperatures, forming toxic and corrosive gases such as phosgene, hydrogen chloride, and chlorine.



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Extinguishing Media:

For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam.

Autoignition Temperature:

Not applicable.

Flash Point:

Not applicable.

NFPA Rating:

Health- 2, Flammability- 0, Instability- 0.

Explosion Limits:

Lower: n/a Upper: n/a

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 that lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation. Approach spill from upwind.

Section 7 - Handling and Storage

Handling:

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Avoid contact with eyes, skin, and clothing. Do not breathe dust, mist, or vapor. Do not ingest or inhale. Store protected from light.

Storage:

Do not store in direct sunlight. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from strong bases.

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 ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits:

Chemical Name:	ACGIH	NIOSH	OSHA
Chloroform	10 ppm TWA	500 ppm IDLH	50 ppm Ceiling; 240 mg/m ³ Ceiling
Ethanol	1000 ppm TWA	1000 ppm TWA 1900 mg/m ³ TWA 3300 ppm IDLH	1000 ppm TWA; 1900 mg/m ³ TWA

OSHA Vacated PELs:

Chloroform: 2 ppm TWA; 9.78 mg/m³ TWA, Ethyl alcohol: 1000 ppm TWA; 1900 mg/m³ TWA



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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 gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State:	Liquid
Color:	Colorless
Odor:	Sweet, fruity odor
pH:	Not available
Vapor Pressure:	160 mm Hg @ 20°C
Vapor Density:	4.12 (Air = 1)
Evaporation Rate:	11.6 (Butyl acetate = 1)
Viscosity:	0.58 cps @ 20°C
Boiling Point:	60.5 – 61.5°C
Freezing/Melting Point:	-63°C
Decomposition Temperature:	290°C
Solubility in water:	Slightly soluble
Specific Gravity/Density:	1.492
Molecular Formula:	CHCl ₃
Molecular Weight:	119.37

Section 10 - Stability and Reactivity

Chemical Stability:

Stable at room temperature in closed containers under normal storage and handling conditions.

Light sensitive. Hygroscopic: absorbs moisture or water from the air.

Conditions to Avoid:

Light, excess heat, loss of inhibitor.

Incompatibilities with Other Materials:

Strong bases, alkali metals, fluorine, dinitrogen tetroxide, potassium tert-butoxide, powdered aluminum, nitrogen tetroxide, powdered magnesium, disilane, sodium methylate, triisopropylphosphine.

Hazardous Decomposition Products:

Hydrogen chloride, chlorine, phosgene gas.

Hazardous Polymerization:

Has not been reported.



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Section 11 - Toxicological Information

RTECS:

CAS# 64-17-5: KQ6300000.

CAS# 67-66-3: FS9100000.

LD50/LC50:

CAS# 67-66-3:

Draize test, rabbit, eye: 20 mg/24H Moderate

Draize test, rabbit, skin: 500 mg/24H Mild

Inhalation, rat: LC50 = 47702 mg/m³/4H

Inhalation, rat: LC50 = 6000 mg/m³/6H

Oral, mouse: LD50 = 36 mg/kg

Oral, rat: LD50 = 695 mg/kg;

Skin, rabbit: LD50 = >20 gm/kg

CAS# 64-17-5:

Draize test, rabbit, eye: 500 mg/24H Mild

Draize test, rabbit, skin: 20 mg/24H Moderate

Inhalation, mouse: LC50 = 39 gm/m³/4H

Inhalation, rat: LC50 = 20000 ppm/10H

Oral, mouse: LD50 = 3450 mg/kg

Oral, rat: LD50 = 7060 mg/kg

Oral, rat: LD50 = 9000 mg/kg

Carcinogenicity:

CAS# 67-66-3:

- **ACGIH:** A3 - Confirmed animal carcinogen with unknown relevance to humans
- **California:** carcinogen, initial date 10/1/87
- **NTP:** Suspect carcinogen
- **IARC:** Group 2B carcinogen

CAS# 64-17-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology:

No information found

Teratogenicity:

Oral, rat: TDL0 = 1260 mg/kg (female 6-15 day(s) after conception) Effects on Embryo or Fetus - fetotoxicity (except death, e.g., stunted fetus) Specific Developmental Abnormalities - musculoskeletal system

Inhalation, rat: TCLo = 100 ppm/7H (female 6-15 day(s) after conception) Specific Developmental Abnormalities - gastrointestinal system and homeostasis

Inhalation, mouse: TCLo = 100 ppm/7H (female 8-15 day(s) after conception) Specific Developmental Abnormalities - craniofacial (including nose and tongue).

Reproductive:

Inhalation, rat: TCLo = 30 ppm/7H (female 6-15 day(s) after conception) Fertility - other measures of fertility.

Inhalation, rat: TCLo = 300 ppm/7H (female 6-15 day(s) after conception) Fertility - female fertility index (e.g. # females pregnant per # sperm positive females; # females pregnant per # females mated) and post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants).



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Mutagenicity:

DNA Inhibition: Human, HeLa cell = 19 mmol/L.; Sister Chromatid Exchange: Human, Lymphocyte = 10 mmol/L.; Micronucleus Test: Oral, rat = 4 mmol/kg.; Unscheduled DNA Synthesis: Oral, rat = 1 gm/kg.; Sister Chromatid Exchange: Hamster, Embryo = 100 umol/L.

Neurotoxicity:

No information found

Section 12 - Ecological Information

Ecotoxicity: Fish: Channel catfish: LC50 = 75 ppm; 96 Hr; Unspecified; Fish: Rainbow trout: LC50 = 43.8 mg/L; 96 Hr; Static bioassay; Fish: Fathead Minnow: LC50 = 129.0 mg/L; 96 Hr; Static bioassay (pH = 7.6-8.3); Fish: Bluegill/Sunfish: LC50 = 100.0 mg/L; 96 Hr; Static bioassay; Water flea Daphnia: EC50 = 28.9 mg/L; 48 Hr; Static bioassay. The majority of the environmental releases from industrial uses are to the atmosphere; releases to water and land will be primarily lost by evaporation and will end up in the atmosphere. Release to the atmosphere may be transported long distances and will photodegrade with a half-life of a few months. Spills and other releases on land will also leach into the groundwater where it will reside for long periods of time.

Environmental: Chloroform will not be expected to bioconcentrate into the food chain but contamination of food is likely due to its use as an extractant and its presence in drinking water.

Section 13 - Disposal Considerations

Dispose of in accordance with Federal, State, and local regulations.

Section 14 - Transport Information

US DOT

Shipping Name: Chloroform
Hazard Class: 6.1
UN Number: UN1888
Packing Group: PG III

Section 15 - Regulatory Information

US Federal

TSCA:

CAS# 64-17-5 is listed on the TSCA Inventory.

CAS# 67-66-3 is listed on the TSCA Inventory.

SARA Reportable Quantities (RQ):

CAS# 67-66-3: final RQ = 10 pounds (4.54 kg)

CERCLA/SARA Section 313:

This material contains Chloroform (CAS# 67-66-3, >99%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

OSHA - Highly Hazardous:

None of the chemicals in this product are considered highly hazardous by OSHA.



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US State

State Right to Know:

CAS# 67-66-3 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

CAS# 64-17-5 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Regulations:

WARNING: This product contains Chloroform, a chemical known to the state of California to cause cancer.

WARNING: This product contains Ethyl alcohol, a chemical known to the state of California to cause developmental reproductive toxicity.

California No Significant Risk Level: CAS# 67-66-3: 20 µg/day NSRL (oral); 40 µg/day NSRL (inhalation)

European/International Regulations

Canadian DSL/NDSL:

CAS# 64-17-5 is listed on Canada's DSL List.

CAS# 67-66-3 is listed on Canada's DSL List.

Canada Ingredient Disclosure List:

CAS# 64-17-5 is listed on Canada's Ingredient Disclosure List.

CAS# 67-66-3 is listed on Canada's Ingredient Disclosure List.

Section 16 - Other Information

MSDS Creation Date: September 27, 1998

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