



The Science Company®

MSDS

Material Safety Data Sheet

1. PRODUCT and COMPANY IDENTIFICATION

Product: Chloroform

Product Code(s): NC-0217, NC-0218, NC-11054

Synonyms: Trichloromethane, Methyl trichloride

Distributor: The Science Company

95 Lincoln St, Denver, CO 80203

Ph: (303)777-3777 Fax: (303)777-3331

IN CASE OF EMERGENCY

24 HOUR CONTACT TELEPHONE

CHEM-TEL: (800)255-3924

All non-emergency questions may be directed to customer service (303)777-3777

2. COMPOSITION and INFORMATION on INGREDIENTS

<u>Ingredients</u>	<u>CAS#</u>	<u>Chemical Formula</u>	<u>Formula Weight</u>	<u>Hazardous</u>	<u>% by Weight</u>
Chloroform	67-66-3	CHCl ₃	119.38	Yes	>98.5
Ethyl Alcohol	64-17-5	C ₂ H ₅ OH	46.07	Yes	0.5-1.5

3. HAZARDS IDENTIFICATION

Emergency Overview:

POISON! DANGER! MAY BE FATAL IF SWALLOWED, INHALED, OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT. MAY AFFECT HEART, CENTRAL NERVOUS SYSTEM, CARDIOVASCULAR SYSTEM, LIVER, AND/OR KIDNEYS. SUSPECT CANCER HAZARD. MAY CAUSE CANCER.

SAFETY RATINGS: Health: 3, Severe Reactivity: 1, Slight
Flammability: 0, None Contact: 2, Moderate

Protective Equipment: Chemical Safety Glasses/Goggles, Lab Coat/Apron, Gloves, Local/General Ventilation

Storage Code: Blue: Health

Potential Health Effects:

INHALATION:

Potent anesthetic. Irritates respiratory tract and affects central nervous system including headaches, drowsiness and dizziness. May cause liver damage and blood disorders. Exposure to higher concentrations may result in unconsciousness and even death. Prolonged exposure may lead to death due to irregular heartbeat, kidney and/or liver disorders.

INGESTION:

May cause pain and burning in the mouth, abdomen and swelling in the throat with possible suffocation. May cause edema, anemia, nausea, vomiting, diarrhea, kidney damage and shock with fall of blood pressure. Large quantities may cause symptoms similar to inhalation.

SKIN CONTACT:

Chloroform is a defatting agent and may cause skin to become dry and cracked. Skin absorption can occur, symptoms may parallel ingestion exposure.

EYE CONTACT:

Vapors cause irritation to the eyes with redness, pain, and blurred vision. Higher concentrations or splashes may cause irreversible eye damage. May bond contacts to eye tissue.

POTENTIAL CHRONIC HEALTH EFFECTS:

Prolonged or repeated exposure to vapors may cause damage to central nervous system, the heart, kidneys and/or liver. Contact with liquid has a defatting effect and may cause chronic irritation with cracking, drying and corresponding dermatitis. Chloroform is a suspected human carcinogen.

MEDICAL CONDITIONS GENERALLY AGGRAVATED by EXPOSURE:

Persons with pre-existing skin disorders or eye problems or impaired liver or kidney function may be more susceptible to the effects of the substance.

4. FIRST AID MEASURES

INHALATION:

Remove to fresh air. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. **GET MEDICAL ATTENTION IMMEDIATELY.**

INGESTION:

DO NOT INDUCE VOMITING. Give large quantities of water to drink. Never give anything by mouth to an unconscious person. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT:

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. GET MEDICAL ATTENTION IMMEDIATELY.

EYE CONTACT:

Check for and remove contact lenses. Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. GET MEDICAL ATTENTION IMMEDIATELY.

5. FIRE FIGHTING MEASURES

NFPA RATINGS: Health: 2 Flammability: 0 Reactivity: 0

FIRE:

Slight fire hazard when exposed to high heat.

EXPLOSION:

Containers may rupture when exposed to high heat.

FIRE EXTINGUISHING MEDIA:

Water spray, dry chemical, alcohol foam, or carbon dioxide. Water spray may be used to keep fire exposed containers cool.

SPECIAL INFORMATION:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode. Water spray may be used to keep fire exposed containers cool. Use water spray to blanket fire, cool fire exposed containers, and to flush non-ignited spills or vapors away from fire.

6. ACCIDENTAL RELEASE MEASURES

Remove all sources of ignition. Ventilate area of leak or spill. Isolate hazard area and keep unnecessary and unprotected personnel away from the area of the leak or spill. Wear appropriate personal protective equipment as specified in the Exposure Control and Personal Protection Section 8. Use non sparking tools and equipment. Contain and recover liquid when possible. Collect liquid in an appropriate container or absorb with an inert material (e.g. vermiculite, dry sand, earth), and place in a suitable container for reclamation or disposal. Do not use combustible materials, such as sawdust. Do not flush to sewer. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800)424-8802.

7. HANDLING and STORAGE

Store in a cool, dry, ventilated storage area in light resistant containers. Keep containers tightly closed and upright. Protect from physical damage. Keep out of direct sunlight and away from heat, sources of ignition, water and incompatible materials. Do not wash out container and use it for any other purpose. Separate from incompatibles, combustibles, organic or other readily oxidizable materials. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquids); observe all warnings and precautions listed for the product. Storage and use areas should be non-smoking. Wash thoroughly after handling.

8. EXPOSURE CONTROL and PERSON PROTECTION**EXPOSURE LIMITS:**

OSHA; Permissible Exposure Limit (PEL): 50 ppm (TWA).

ACGIH; Threshold Limit Value (TLV): 10 ppm (TWA).

Listed as A3 animal carcinogen

VENTILATION SYSTEM:

A system of local and/or general ventilation is recommended to keep employee exposure below airborne limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion into the general work area.

PERSONAL RESPIRATORS (NIOSH) APPROVED:

If the exposure limit is exceeded and engineering controls are not feasible, wear an appropriate respirator with cartridge for the hazardous material being handled. All respirators should be approved and certified. For emergencies or instances where the exposure levels are not known, use a full face piece positive pressure, air supplied respirator. **WARNING:** Air purifying respirators do not protect workers in oxygen deficient atmospheres. This substance has poor warning properties.

SKIN PROTECTION:

Wear protective clothing, gloves, lab coat or apron, as appropriate, to prevent skin contact.

EYE PROTECTION:

Use chemical safety glasses/goggles and/or a full face shield where splashing is possible. Maintain approved eye wash station and quick drench facilities in work area.

9. PHYSICAL and CHEMICAL PROPERTIES

APPEARANCE:	Clear liquid.
ODOR:	Sweet.
SOLUBILITY:	0.8g/ 100g water @ 20C (68F)
SPECIFIC GRAVITY:	1.48 @ 20C/4C
pH:	No information found.
% VOLATILES by VOLUME:	100
BOILING POINT:	62°C (144°F)
MELTING POINT:	-63.5°C (-83°F)
VAPOR DENSITY (Air =1):	4.1
VAPOR PRESSURE (mm Hg):	160 @ 20°C (68°F)
EVAPORATION RATE (BuAc=1):	11.6

10. STABILITY and REACTIVITY**STABILITY:**

Stable under ordinary conditions of use and storage. pH decreases on prolonged exposure to light and air due the formation of HCl.

HAZARDOUS DECOMPOSITION PRODUCTS:

May produce carbon monoxide, carbon dioxide, hydrogen chloride and phosgene when heated to decomposition.

HAZARDOUS POLYMERIZATION:

Will not occur.

INCOMPATIBILITIES:

Strong caustics and chemically active metals such as aluminum, magnesium powder, sodium or potassium. Acetone, fluorine, methanol, sodium methoxide, dinitrogen tetroxide, tert-butoxide, triisopropylphosphine.

CONDITIONS to AVOID:

Heat, flames, ignition sources and incompatibles.

11. TOXICOLOGICAL INFORMATION**TOXICOLOGICAL DATA:**

Oral rat LD50:	908 mg/kg.
Inhalation rat LC50:	47702mg/m33.
Skin rabbit LD50:	>20gm/kg.

Irritation Data, standard Draize: Skin rabbit, 10mg/24hr. (moderate); Eye rabbit, 20 mg/24hr. (moderate). Investigated as a tumorigen, mutagen and reproductive effector. Birth defects have been seen in rats and mice exposed by inhalation of chloroform at concentrations greater than 100 ppm in air. Ingestion of chloroform by pregnant laboratory animals has resulted in fetotoxicity but not birth defects, and only at levels causing sever maternal effects.

Cancer Lists Ingredient	-----NTP Carcinogen-----		IARC Category
	Known	Anticipated	
Chloroform (67-66-3)	No	Yes	2B
Ethyl Alcohol (64-17-5)	No	No	None

12. ECOLOGICAL INFORMATION**ENVIROMENTAL FATE:**

When released into soil, this material is expected to leach into ground water. When released into soil; this material is expected to quickly evaporate. When released into water, this material is expected to quickly evaporate. When release into water; this material is expected to have a half life between 1 to 10 days. This material has a log octanol-water partition coefficient of less than 3. This material is not expected to significantly bioaccumulate. When released into air; this material may be moderately degraded by reaction with photochemically produced hydroxyl radicals. When released into air; this material may be moderately degraded by photolysis. When released into air; this material may be removed by the atmosphere to a moderate extent by wet deposition. When released into air; this material is expected to have a half life of greater than 30 days.

ENVIROMENTAL TOXICITY:

This material is not expected to be toxic to aquatic life. The LD50/96-hour values for fish are over 100mg/l.

13. DISPOSAL INFORMATION

Whatever cannot be saved for recovery or recycling should be handled as potentially hazardous waste and disposed of or incinerated at an approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. TRANSPORT INFORMATION**TRANSPORT (Land, DOT):**

UN1888, Chloroform, 6.1, PGIII

15. REGULATORY INFORMATION

Chemical Inventory Status – Part 1

Ingredient	TSCA	EC	Japan	Australia
Chloroform (67-66-3)	Yes	Yes	Yes	Yes
Ethanol (64-17-5)	Yes	Yes	Yes	Yes

Chemical Inventory Status – Part 2

Ingredient	Korea	DSL	-----Canada----- NDSL	Phil
Chloroform (67-66-3)	Yes	Yes	No	Yes
Ethanol (64-17-5)	Yes	Yes	No	Yes

Federal, State & International Regulations – Part 1

Ingredient	--SARA 302--		-----SARA 313-----	
	RQ	TPQ	List	Chemical Catg
Chloroform (67-66-3)	10	10000	Yes	No
Ethanol (64-17-5)	No	No	No	No

Federal, State & International Regulations – Part 2

Ingredient	CERCLA	RCRA	TSCA
		261.33	8 (d)
Chloroform (657-66-3)	10	U044	No
Ethanol (64-17-5)	No	No	No

Chemical Weapons Convention: No TSCA 12 (b): No CDTA: Yes SARA 311/312: Acute: Yes Chronic: Yes
 Fire: No Pressure: No Reactivity: No Physical State: (Mixture/Liquid)

Australian Hazchem Code: 2Z

Poison Schedule: S6

16. OTHER INFORMATION

PRODUCT USE:

For manufacturing, industrial and laboratory use only; not for household use.

DISCLAIMER:

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