

CHLOROFORM

Material Safety Data Sheet

Mallinckrodt Chemical, Inc.

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Emergency Telephone Number
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Effective Date: 04-19-95 Supersedes 11-27-89

PRODUCT IDENTIFICATION:

Synonyms: Trichloromethane

Formula CAS No.: 67-66-3

Molecular Weight: 119.38

Hazardous Ingredients: Chloroform

Chemical Formula: CHCl₃

PRECAUTIONARY MEASURES

DANGER! MAY BE FATAL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. MAY EFFECT CENTRAL NERVOUS SYSTEM, CARDIOVASCULAR SYSTEM, LIVER AND KIDNEYS. SUSPECT CANCER HAZARD. MAY CAUSE CANCER. Risk of cancer depends on duration and level of exposure.

Do not breathe vapor.

Do not get in eyes, on skin, or on clothing.

Keep container closed.

Use with adequate ventilation.

Wash thoroughly after handling.

EMERGENCY FIRST AID

If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. In all cases call a physician.
SEE SECTION 5.

Physical Data

SECTION 1

Appearance: Clear colorless liquid.

Odor: Characteristic, ethereal.

Solubility: 0.8g/100g water @ 20 C (68 F).

Boiling Point: 61.3 C (142 F).

Vapor Density (Air=1): 4.1

Melting Point: -63.5 C (-82 F).

Vapor Pressure (mm Hg): 100 @ 10.4 C (51 F).

Specific Gravity: 1.49

Evaporation Rate: (BuAc=1): 11.6

NFPA Ratings: Health: 2 Flammability: 0 Reactivity: 0

Fire and Explosion

SECTION 2

Information

Fire:

Slight fire hazard when exposed to high heat; otherwise, practically not flammable.

Explosion:

Not considered to be an explosion hazard.

Fire Extinguishing Media:

Use any means suitable for extinguishing surrounding fire.

Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

Reactivity Data

SECTION 3

Stability:

Stable under ordinary conditions of use and storage.

Hazardous Decomposition
Products:

Toxic gases and vapors such as hydrogen chloride, chlorine, phosgene, and carbon monoxide may be released upon heating 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.

Leak/Spill Disposal Information

SECTION 4

Ventilate area of leak or spill. Remove all sources of ignition. Clean-up personnel require protective clothing and respiratory protection from vapors. Contain and recover liquid when possible. Collect as hazardous waste and atomize in a suitable RCRA approved combustion chamber, or absorb with vermiculite, dry sand, earth or similar material for disposal as hazardous waste in a RCRA approved facility. Do not flush to sewer!
Reportable Quantity (RQ) (CWA/CERCLA) : 10 lbs.
Ensure compliance with local, state and federal regulations.

Health Hazard Information

SECTION 5

A. Exposure/Health Effects-----
Inhalation:

Acts as a relatively potent anesthetic. Irritates respiratory tract and causes central nervous system effects, including headache, drowsiness, dizziness. Higher and unconsciousness. Prolonged exposure may lead to death due to irregular heart beat and kidney and liver disorders.

Ingestion:

Causes severe burning in mouth and throat, pain in the chest and vomiting. Large quantities may cause symptoms similar to inhalation.

Skin Contact:

Causes skin irritation resulting in redness and pain. Removes natural oils. May be absorbed through skin.

Eye Contact:

Vapors causes pain and irritation to eyes. Splashes may cause severe irritation and possible eye damage.

Chronic Exposure:

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

Aggravation of

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

FIRST AID

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion: Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.

Skin Exposure: 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. Call a physician immediately.

Eye Exposure: Wash eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

C. TOXICITY (RTECS, 1994)

Oral rat LD50: 908 mg/kg; skin rabbit LD50: > 20 gm/kg; inhalation rat LC50: 47702 mg/m³/4H; irritation data: skin rabbit 10 mg/24H open mild; eye rabbit: 20 mg/24H moderate; investigated as a tumorigen, mutagen, reproductive effector; Cancer Status: IARC Category 2B, NTP Listed Carcinogen.

Occupational Control Measures SECTION 6

Airborne Exposure Limits: -OSHA Permissible Exposure Limit (PEL): 2 ppm (TWA) -ACGIH Threshold Limit Value (TLV): 10 ppm (TWA), Listed as A2 suspected human carcinogen

Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

Personal Respirators (NIOSH Approved) If the TLV is exceeded, wear a supplied air, full-facepiece respirator, airlined hood, or self-contained breathing apparatus.

Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection: Use chemical safety goggles and/or a full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work area.

Storage and Special Information SECTION 7

Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities. Wear special protective equipment (Sec. 6) for maintenance break-in or where exposures may exceed established exposure levels. Wash hands, face, forearms and neck when exiting restricted areas. Shower, dispose of outer

clothing, change to clean garments at the end of the day. Avoid cross-contamination of street clothes. Wash hands before eating and do not eat, drink, or smoke in workplace. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product. Odor threshold: 250 mg/m³. The odor threshold only serves as a warning of exposure; not smelling it does not mean you are not being exposed.

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Addendum to Material Safety Data Sheet

REGULATORY STATUS

This Addendum Must Not Be
Detached from the MSDS
Identifies SARA 313 substance(s)

Any copying or redistribution of the MSDS
must include a copy of this addendum

Hazard Categories for SARA Section 311/312 Reporting

Acute	Chronic	Fire	Pressure	Reactive
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X	X			

Product or Components of Product:	SARA EHS		SARA Sec. 313 Chemicals		CERCLA	RCRA
	Sec. 302 RQ	TPQ	Name List	Chemical Category	Sec.103 RQ lbs	Sec. 261.33
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CHLOROFORM						
Chloroform (67-66-3)						
100%	10	10,000	Yes	No	10	U044
Listed on the TSCA Inventory.						

PROPOSITION 65 Warning!

This product contains a chemical known to
the state of California to cause cancer.

SARA Section 302 EHS RQ:
Reportable Quantity of Extremely Hazardous Substance, listed at 40 CFR 355.

SARA Section 302 EHS TPQ:
Threshold Planning Quantity of Extremely Hazardous substance. An asterisk (*) following a Threshold Planning Quantity signifies that if the material is a solid and has a particle size equal to or larger than 100 micrometers, the Threshold Planning Quantity = 10,000 LBS.

SARA Section 313 Chemicals:

Toxic Substances subject to annual release reporting requirements listed at 40 CFR 372.65.

CERCLA Sec. 103:

Comprehensive Environmental Response, Compensation and Liability Act (Superfund) releases to air, land or water of these hazardous substances which exceed the Reportable Quantity (RQ) must be reported to the National Response Center, (800-424-8802); Listed at 40 CFR 302.4

RCRA:

Resource Conservation and Recovery Act. Commercial chemical product wastes designated as acute hazards or toxic under 40 CFR 261.33

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