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24 HOUR EMERGENCY NUMBER (CHEMTREC)
USA: 800-424-9300
International: 703-527-3887

All non-emergency numbers should be directed to Tedia Customer Service at 800-PURITY1

SAFETY DATA SHEET

Chloroform with Ethanol

SDS No. M0043

1 IDENTIFICATION

1.1 Product Identifier:
Chemical Name: Chloroform with Ethanol
Synonyms: Trichloromethane; Methyl trichloride; Methane trichloride
CAS No.: Mixture - 67-66-3 (chloroform) 64-17-5 (ethanol)

1.2 Recommended Use and Restrictions:
Use: Laboratory research, analytical applications, and industrial manufacturing. Suitable for use as a solvent in chemical synthesis, cleaning, or processing.
Restrictions: Not for use in food, drugs, cosmetics, medical devices, or household consumer products unless explicitly certified.
Regulatory Note: This product may be subject to TSCA requirements. For commercial/industrial use in the United States, the buyer is responsible for verifying TSCA compliance. Laboratory users should confirm appropriate exemptions apply to their research use.

1.3 Supplier:
Tedia Company LLC, 1000 Tedia Way, Fairfield, Ohio 45014 USA
Phone: 513-874-5340 | Website: www.tedia.com

1.4 Emergency Phone Number:
CHEMTREC (USA): 800-424-9300
CHEMTREC (International): +1-703-527-3887

2 HAZARD IDENTIFICATION

2.1 Classification of the Substance/Mixture
Acute Toxicity (Oral), Category 4 — H302
Acute Toxicity (Inhalation), Category 3 — H331
Acute Toxicity (Dermal), Category 3 — H311
Eye Irritation, Category 2 — H319
Carcinogenicity, Category 2 — H351
Reproductive Toxicity, Category 2 — H361
Specific Target Organ Toxicity - Single Exposure, Category 3 (Narcotic effects) — H336
Specific Target Organ Toxicity - Repeated Exposure, Category 1 (Liver, kidneys) — H372
Aquatic Acute Hazard, Category 3 — H402

2.2 GHS Label Elements
Hazard Pictograms:

Signal Word: DANGER
Hazard Statements:
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer.
H361 Suspected of damaging fertility or the unborn child.
H372 Causes damage to organs (Liver, Kidney) through prolonged or repeated exposure if swallowed.
H402 Harmful to aquatic life.

Precautionary Statements:
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe mist or vapors.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301+P312+P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P304+P340+P311 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 IF exposed or concerned: Get medical advice/ attention.
P332+P313 If skin irritation occurs: Get medical advice/ attention.
P337+P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P403+P235 Store in a well-ventilated place. Keep cool.
P405: Store locked up.
P501: Dispose of contents/container to a hazardous waste facility in accordance with regulations.

2.3 Other Hazards
Vapors heavier than air (vapor density: 3.45) — Decomposes on exposure to light and air to form highly toxic phosgene gas and hydrogen chloride. May form carbon monoxide upon decomposition.

2.4 Emergency Overview
Clear, colorless liquid with a sweet, ethereal odor. Toxic if swallowed, inhaled, or absorbed through the skin. Causes skin and eye irritation. May cause drowsiness or dizziness. Suspected carcinogen and reproductive toxicant. Causes damage to the liver and kidneys through prolonged or repeated exposure. Decomposes to form phosgene. Target Organs: Central nervous system, liver, kidneys.

2.5 HMIS Rating:
Health – 2 Flammability – 0 Physical Hazard – 0 PPE – F (Gloves, goggles, respirator)
NOTE: HMIS ratings (0–4) reflect hazard severity under normal use. Higher values indicate greater risk. PPE recommendations are

minimal; users must assess specific conditions.

3 COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance Identification

Chemical Name: Chloroform with Ethanol

Hazardous	Ingredient	CAS No.	EC No.	Concentration	Molecular Formula
Yes	Chloroform	67-66-3	200-663-8	98%	$CHCl_3$
Yes	Ethanol	64-17-5	200-578-6	2%	C_2H_6O

4 FIRST AID MEASURES

4.1 Description of First Aid Measures

General Advice:

Remove victim from exposure. Ensure first-aiders avoid self-exposure. Call a poison center or doctor immediately. Take this SDS to the healthcare provider.

Inhalation:

Immediately remove to fresh air. Keep at rest in a position comfortable for breathing. If breathing is difficult, trained personnel should administer oxygen. If not breathing, begin artificial respiration (e.g., with a pocket mask) and seek immediate medical attention. WARNING: May cause cardiac arrhythmias. Do not use adrenaline/epinephrine.

Skin Contact:

Remove contaminated clothing immediately. Wash skin thoroughly with plenty of water and soap for at least 15 minutes. Seek medical attention. Wash contaminated clothing before reuse.

Eye Contact:

Hold eyelids open and rinse cautiously with flowing water for at least 15 minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek immediate medical attention from an ophthalmologist.

Ingestion:

Do NOT induce vomiting. Rinse mouth with water. Never give anything by mouth to an unconscious person. Call a poison center or doctor immediately for advice. WARNING: Aspiration hazard. Liquid can enter lungs and cause chemical pneumonitis.

4.2 Most important symptoms and effects, both acute and delayed

Acute Effects:

Inhalation: Dizziness, drowsiness, headache, nausea, narcosis, loss of consciousness. May cause respiratory irritation and cardiac effects (arrhythmias, cardiac arrest).

Ingestion: Abdominal pain, nausea, vomiting, diarrhea. Central nervous system depression (drowsiness, dizziness). Aspiration into lungs can cause severe chemical pneumonitis, which may be fatal.

Skin Contact: Redness, irritation, defatting, and dermatitis. May be absorbed through the skin, contributing to systemic toxicity.

Eye Contact: Redness, pain, tearing, and potential corneal injury.

Systemic: Central nervous system depression, hepatotoxicity, nephrotoxicity.

Delayed Effects:

Prolonged/Repeated Exposure: Can cause liver and kidney damage. Skin contact can lead to dermatitis.

Carcinogenicity: Suspected of causing cancer (see Section 11).

Reproductive Toxicity: Suspected of damaging fertility or the unborn child.

4.3 Indication of any immediate medical attention and special treatment needed

Immediate medical attention is required for all routes of exposure due to the potential for severe systemic toxicity, cardiac effects, and aspiration hazard.

Cardiac Monitoring: Essential after significant exposure due to risk of sensitization of the heart to adrenaline, which can lead to fatal arrhythmias. Catecholamines (e.g., epinephrine) are contraindicated.

Respiratory Support: Oxygen and supportive care for respiratory depression or aspiration pneumonitis.

Liver/Kidney Function: Monitor organ function after significant exposure.

Gastric Lavage: Is contraindicated due to the risk of aspiration and rapid CNS depression. Activated charcoal may be considered if given soon after ingestion and if the patient has a protected airway (e.g., intubated).

4.4 Notes to physician
Toxic Mechanism: Primary effects are central nervous system depression and potential for hepatorenal toxicity. Metabolized to phosgene and other reactive species which can cause liver and kidney necrosis.
Cardiac Sensitization: Chloroform sensitizes the myocardium to endogenous catecholamines, which can lead to ventricular fibrillation or cardiac arrest. Avoid use of sympathomimetic drugs (e.g., epinephrine, isoprenaline).
Aspiration Risk: A significant risk exists if ingested, leading to chemical pneumonitis. Treatment is supportive.
Delayed Toxicity: Liver and kidney damage may manifest 24-48 hours post-exposure. Monitor hepatic and renal function.
Metabolites: Consider potential for metabolites (phosgene, hydrochloric acid) to contribute to toxicity, especially in cases of decomposition.
Enhanced Toxicity: Toxicity may be enhanced by concurrent exposure to other hepatotoxic agents (e.g., ethanol, acetaminophen).

5 FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media
Use dry chemical, CO_2, sand, or alcohol-resistant foam.
Use water spray to cool exposed containers and protect personnel. Direct water jets may spread the fire and should be used with caution.

5.2 Specific hazards arising from the chemical
Combustion Products: Decomposes at elevated temperatures (> 120-150°C) to form highly toxic and corrosive gases including phosgene (carbonyl chloride), hydrogen chloride (HCl), chlorine, and carbon monoxide.
Vapor Hazard: Vapors are heavier than air and may travel a considerable distance to a source of ignition and flash back.
Decomposition products can form explosive mixtures in air.
Container Hazard: Containers may rupture or explode when exposed to intense heat.

5.3 Special protective equipment and precautions for firefighters
Wear self-contained breathing apparatus (SCBA) with a full facepiece operated in pressure-demand or other positive-pressure mode.
Wear full fire-fighting turnout gear and chemical-resistant gloves and boots.
Fight fire from a protected location or upwind to avoid toxic fumes and decomposition products.
Evacuate area and prevent runoff from entering drains, sewers, or waterways.

5.4 Advice for firefighters
Cool containers exposed to flames with water spray until well after the fire is out.
Be aware that highly toxic phosgene gas may be generated by the fire. Monitor the atmosphere for phosgene, CO, and HCl.
Isolate and deny entry to unnecessary personnel.

5.5 National Fire Protective Association: Health – 2, Flammability – 0, Reactivity – 1
Note: NFPA ratings are for emergency response only and reflect acute exposure risks.

6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Evacuate non-essential personnel from the area.
Ventilate the area immediately by opening windows and doors, or use explosion-proof ventilation equipment.
Eliminate all ignition sources (no smoking, flares, sparks, or flames in the vicinity).
Wear appropriate personal protective equipment as specified in Section 8 (e.g., chemical-resistant gloves, goggles, respiratory protection).
Prevent entry into waterways, sewers, basements, or confined areas due to the density of vapors.

6.2 Environmental precautions and reporting requirements
Prevent further leakage or spillage if safe to do so.
Do not allow the product to enter drains, sewers, or waterways.

This mixture contains Chloroform (CAS 67-66-3), which has a U.S. CERCLA Reportable Quantity (RQ) of 10 lbs (4.54 kg).
Any release of this mixture that results in the release of Chloroform equal to or greater than its RQ (10 lbs) must be immediately reported to the National Response Center (NRC) at 1-800-424-8802.
Additionally, comply with all applicable state and local reporting regulations. The release of this quantity may also require notification under SARA Title III (EPCRA) to the State Emergency Response Commission (SERC) and Local Emergency Planning Committee (LEPC).

6.3 Methods and materials for containment and cleaning up

Containment: Dike the spill area with sand, earth, or other inert, non-combustible material to prevent spread.
Absorption: Absorb spilled liquid with inert, non-combustible materials such as vermiculite, dry sand, earth, or commercial chemical absorbent pads.
Collection: Collect absorbed material and place it in a suitable, properly labeled, closed container for disposal.
Surface Cleaning: Ventilate the area well after clean-up. Wash contaminated surfaces with a detergent and water. Collect washing liquids for disposal.
Do not use sawdust or other combustible absorbents.

6.4 Reference to other sections

See Section 8 for information on exposure controls and personal protection.
See Section 13 for information on disposal of contaminated clean-up material.

7 HANDLING AND STORAGE

7.1 Precautions for safe handling

Use only in a well-ventilated area, preferably with local exhaust ventilation (e.g., a fume hood).
Avoid all contact with eyes, skin, and clothing.
Avoid breathing vapor or mist.
Do not eat, drink, or smoke in areas where this material is handled.
Wash hands thoroughly after handling.
Prevent generation of mists or aerosols.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, well-ventilated, dedicated storage area, protected from direct sunlight.
Keep container tightly closed and upright to prevent leakage.
Store in the original container or in a container of compatible material (see below).
Storage Temperature: Store below 30°C (86°F).
Incompatible Materials: Keep away from:
Strong oxidizers (e.g., peroxides, permanganates, chlorates, perchlorates).
Strong bases (e.g., sodium hydroxide, potassium hydroxide).
Reactive metals (e.g., aluminum, magnesium powder, sodium, potassium).
Acetone in the presence of a base (can lead to violent reaction).

Materials of Construction: Compatible with glass, polyethylene, PTFE (Teflon), and stainless steel. Not compatible with plastics, rubber, and coatings that may degrade or swell.

7.3 Specific end uses

No specific end uses advised beyond those listed in Section 1.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Occupational Exposure Limits

Chloroform [67-66-3]:
OSHA PEL (Ceiling): 50 ppm (240 mg/m^3)
ACGIH TLV (TWA): 10 ppm (49 mg/m^3); (A3 - Confirmed animal carcinogen with unknown relevance to humans)
NIOSH REL (TWA): 2 ppm (9.78 mg/m^3); STEL: [None established]

NIOSH IDLH: 500 ppm (Based on acute CNS effects)
Ethanol [64-17-5]:
ACGIH TLV (TWA): 1000 ppm (1880 mg/m³)
NIOSH REL (TWA): 1000 ppm (1900 mg/m³)
NIOSH IDLH: 3300 ppm

8.2 Engineering Controls

Local Exhaust Ventilation (LEV): Required for all handling operations; use corrosion-resistant, explosion-proof ventilation systems maintaining ≥100 fpm capture velocity at the emission source.

General Ventilation: Maintain minimum 6-10 air changes per hour in storage and handling areas.

Vapor Control: Use of closed-system handling is recommended to minimize airborne concentrations. Fixed continuous air monitors for chloroform are recommended in enclosed or poorly ventilated areas.

8.3 Personal Protective Equipment (PPE)

Respiratory Protection:
< 10 ppm (with confirmed LEV): None required.
10 - 500 ppm: Full-facepiece air-purifying respirator (APR) with organic vapor cartridges and P100 particulate filters.
> 500 ppm or unknown concentration: NIOSH-approved positive-pressure self-contained breathing apparatus (SCBA).
Eye/Face Protection: Chemical splash goggles (ANSI Z87.1 compliant). A full-face shield should be added during pouring, transfer, or splash hazard operations.

Skin Protection:
Hands: Butyl rubber, Viton®, or Silver Shield/4H® gloves (consult supplier permeation data).
Body: Wear a chemical-resistant apron or suit where splash hazard exists.

Footwear: Chemical-resistant safety boots.
Other: Safety showers and eyewash stations must be accessible within 10 seconds of the work area.

8.4 Hygiene Practices

Do not eat, drink, or smoke in areas where this material is handled, processed, or stored.

Wash hands and face thoroughly with soap and water after handling and before eating, drinking, or using tobacco products.

Remove contaminated clothing immediately and launder before reuse. Do not take contaminated clothing home.

Pre-/post-shift health monitoring is recommended for workers with potential exposure to monitor for neurological, hepatic, or renal symptoms.

9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties
a) Appearance: Clear, colorless liquid
b) Odor: Characteristic, sweet, ethereal odor
c) Odor threshold: Not available for mixture
d) pH: Not applicable (non-aqueous)
e) Melting point/freezing point: ≈ -63 °C
f) Initial boiling point and boiling range: ≈ 60 - 62 °C
g) Flash point: No data available
h) Evaporation rate: > 1 (Butyl acetate = 1)
i) Flammability: No data available
j) Upper/lower flammability or explosive limits: Not applicable (non-flammable under normal conditions)
k) Vapor pressure: ≈ 160 mmHg @ 20 °C
l) Vapor density: ≈ 4.1 (Air = 1)
m) Relative density: ≈ 1.48 @ 20 °C (Water = 1) [Note: Corrected value for chloroform]
n) Solubility: Slightly soluble in water (≈ 8 g/L @ 20 °C). Miscible with alcohol, ether, benzene, petroleum ether, and other fixed and volatile oils.
o) Partition coefficient: n-octanol/water (log Kow): ≈ 1.97 [Note: Standard value for chloroform]

p) Auto-ignition temperature: Not applicable (does not readily ignite)
q) Decomposition temperature: Begins > 120-150 °C (forms phosgene and HCl)
r) Viscosity: ≈ 0.56 mPa·s @ 20 °C
s) Explosive properties: Not explosive. Will not form peroxides.
t) Oxidizing properties: Not oxidizing.

9.2 Other Safety Characteristics

Stability: Unstable. Decomposes slowly on contact with air and light to form phosgene, hydrogen chloride, and chlorine. Stabilized with 1.5-2.5% ethanol to inhibit phosgene formation.
Static Accumulator: This liquid is a static accumulator. Bonding and grounding are required during transfer.
Refractive Index: ≈ 1.446 @ 20 °C
Dielectric Constant: ≈ 4.8 @ 20 °C

10 STABILITY AND REACTIVITY

10.1 Reactivity

No hazardous reactivity under normal conditions of temperature and pressure. However, the product is unstable and will decompose under specific conditions.

10.2 Chemical stability

Unstable. Decomposes on contact with air, light, and heat to form highly toxic phosgene (carbonyl chloride) and corrosive hydrogen chloride gas. Stabilized with 0.5-1.5% ethanol to inhibit this reaction.

10.3 Conditions to avoid

Light: Exposure to light (especially UV) accelerates decomposition.
Air: Prolonged contact with air promotes oxidation and phosgene formation.
Heat: Elevated temperatures (> 120-150 °C) significantly increase the rate of decomposition.
Incompatible Materials: Contact with strong oxidizers, strong bases, and reactive metals (see 10.4).

10.4 Incompatible materials

Strong Oxidizers: (e.g., chromic acid, permanganates, nitric acid) – Risk of violent reaction.
Strong Bases: (e.g., sodium hydroxide, potassium hydroxide, amines) – Can catalyze decomposition.
Reactive Metals: (e.g., aluminum powder, magnesium) – Can react vigorously.
Acetone: Violent reaction can occur, especially in the presence of a base.

10.5 Hazardous decomposition products

Decomposition Products: Thermal decomposition or combustion produces highly toxic and corrosive gases including:
Phosgene (Carbonyl Chloride)
Hydrogen Chloride (HCl)
Chlorine
Carbon Monoxide (CO)

10.6 Possibility of hazardous reactions

Hazardous polymerization will not occur. The primary hazardous reactions are decomposition to phosgene and violent reactions with incompatible materials listed in 10.4.

10.7 Static electricity hazard

This liquid has low electrical conductivity and can accumulate static charge. Bonding and grounding of all containers and transfer equipment are required to prevent static discharge during handling.

11 TOXICOLOGICAL INFORMATION

11.1 Information on hazard classes

Acute Toxicity:

Oral (Category 4): H302 - Toxic if swallowed. (Rat LD_{50} = 908 mg/kg)
Dermal (Category 3): H311 - Toxic in contact with skin. (Rabbit LD_{50} > 20,000 mg/kg; based on skin absorption hazard)
Inhalation (Category 3): H331 - Toxic if inhaled. (Rat LC_{50} ~ 50,000 ppm/4H; based on acute CNS effects)
Aspiration Hazard (Category 1): H304 - May be fatal if swallowed and enters airways.
Serious Eye Damage/Irritation (Category 2): H319 - Causes serious eye irritation.
Carcinogenicity (Category 1B): H350 - May cause cancer. (IARC Group 2B, NTP)
Specific Target Organ Toxicity - Single Exposure (Category 3): H336 - May cause drowsiness or dizziness.
Specific Target Organ Toxicity - Repeated Exposure (Category 1): H372 - Causes damage to organs (liver, kidneys) through prolonged or repeated exposure.

11.2 Acute toxicity
Inhalation LC_{50} (rat, 4h): ~ 50,000 ppm (approx. 240 g/m^3)
Oral LD_{50} (rat): 908 mg/kg
Dermal LD_{50} (rabbit): > 20,000 mg/kg
Symptoms of Acute Exposure: Central nervous system depression (drowsiness, dizziness, headache, narcosis), nausea, vomiting, cardiac arrhythmias, liver and kidney damage. Irritation of eyes, skin, and respiratory tract.

11.3 Corrosion/irritation
Skin: Causes irritation and defatting, which may lead to dermatitis. Not corrosive.
Eyes: Causes irritation, pain, redness, and tearing. Not corrosive.

11.4 Sensitization
Respiratory: Not classified as a respiratory sensitizer.
Skin: Not classified as a skin sensitizer.

11.5 Repeated dose toxicity
Primary Target Organs: Liver and kidneys.
Effects: Repeated or prolonged exposure can lead to hepatotoxicity (liver damage) and nephrotoxicity (kidney damage), even at relatively low exposure levels. Central nervous system effects (headache, dizziness) may also occur.

11.6 Carcinogenicity
IARC: Group 2B (Possibly carcinogenic to humans).
NTP: Reasonably anticipated to be a human carcinogen.
ACGIH: A3 - Confirmed animal carcinogen with unknown relevance to humans.
EPA IRIS: Likely to be carcinogenic to humans by all routes of exposure under high-exposure conditions that lead to cytotoxicity and regenerative cell proliferation.

11.7 Reproductive toxicity
Reproductive Effects: Limited evidence of adverse effects on fertility in animal studies at high doses that also caused maternal toxicity.
Developmental Effects: Evidence of fetotoxicity and developmental abnormalities in animal studies at maternally toxic doses. Not classified for reproductive toxicity under GHS, but suspected based on animal data (H361).

11.8 Mutagenicity
Overall, results of in vitro and in vivo mutagenicity tests are mixed but predominantly negative. Not considered a potent mutagen.

11.9 Toxicokinetic, metabolism, and distribution
Readily absorbed through the lungs, gastrointestinal tract, and skin.
Primarily metabolized in the liver by cytochrome P-450 to phosgene (a highly toxic intermediate) and hydrochloric acid. This metabolic pathway is responsible for its hepatorenal toxicity.
Distributed throughout the body, with a tendency to accumulate in lipid-rich tissues.
Excreted slowly, primarily via the lungs as unchanged chloroform, and to a lesser extent in urine as metabolites.

11.10 Other information - Target Organs

Primary: Liver, Kidneys, Central Nervous System.
Secondary: Heart (cardiac sensitization), Eyes, Skin.

12 ECOLOGICAL INFORMATION

12.1 Toxicity

Aquatic Toxicity (Chloroform):
Fish (96-h LC_{50}): ~ 50 - 100 mg/L
Fathead minnow: 75 mg/L
Rainbow trout: 43.8 mg/L
Aquatic Invertebrates (48-h EC_{50}): ~ 30 - 50 mg/L
Daphnia magna: 28.9 mg/L
Algae (72-96-h EC_{50}): > 100 mg/L
Classification: Acute Aquatic Toxicity, Category 3 (H402: Harmful to aquatic life).

12.2 Persistence and degradability

Abiotic Degradation: Volatilization is expected to be the dominant removal process from water (half-life ~ 3-5 hours in a model river). Reaction with photochemically produced hydroxyl radicals in the atmosphere is rapid (atmospheric half-life ~ 100 days).
Biodegradation: Not readily biodegradable. Shows resistance to microbial degradation in standard screening tests.

12.3 Bioaccumulation potential

Bioaccumulation Factor (BAF): Low to moderate. Experimental log Kow (~1.97) suggests a potential for bioaccumulation, but this is mitigated by its high volatility and metabolic reactivity in organisms.
Classification: Not classified for bioaccumulation.

12.4 Mobility in soil

Soil Adsorption (Koc): Estimated Koc values range from 10 to 50, indicating high mobility in soil. Expected to leach into groundwater.
Volatilization: Will volatilize from moist and dry soil surfaces.

12.5 Other adverse effects

No other known significant adverse ecological effects.
PBT / vPvB Assessment: This substance is not considered a PBT (Persistent, Bioaccumulative, and Toxic) or vPvB (very Persistent and very Bioaccumulative) substance.

13 DISPOSAL CONSIDERATIONS

13.1 Waste Classification & Disposal Methods

Waste Classification (U.S. RCRA 40 CFR §261):
D022 (Chloroform, Toxic Waste) – Listed in §261.33(f) with a statutory listing code of F024 and a waste number of D022.
U044 (Chloroform) – Applies only if the discarded material is a commercial chemical product, off-specification species, container residue, or spill residue thereof, listed in §261.33(f).

Recommended Disposal Methods:
Incineration: High-temperature (≥ 1100°C / 2000°F) thermal treatment in a permitted hazardous waste incinerator equipped with acid gas (HCl) scrubbers, complying with 40 CFR Part 264/265, Subpart O standards.
Recycling/Recovery: Solvent recovery via distillation by a licensed facility is the preferred waste minimization method.
Landfill Disposal Prohibition: Liquid waste disposal is prohibited in municipal solid waste landfills under 40 CFR Part 258.

13.2 Container Management

Empty Containers: Containers are considered "empty" per 40 CFR §261.7(b)(1)(ii) when all wastes have been removed that can be removed by normal pouring or pumping methods, and no more than 2.5 cm (1 inch) of residue remains on the bottom.
Empty Container Handling: Triple-rinse with a compatible solvent. Collect all rinsate and manage it as hazardous waste under the same waste code(s) (D022/U044). Puncture or crush to prevent reuse. Deface original labels.
Contaminated PPE: Treat contaminated personal protective equipment (e.g., gloves, absorbents) as hazardous waste (D022/U044).

13.3 Special Precautions
Avoid any disposal method that could lead to the release of chloroform vapors or liquid into the environment.
Never dispose of down drains or into waterways.
Reporting: Releases of chloroform equal to or greater than its CERCLA Reportable Quantity (RQ) of 10 lbs (4.54 kg) must be reported to the National Response Center per 40 CFR §302.6.

14 TRANSPORT INFORMATION

14.1 DOT (U.S. Department of Transportation)
Proper Shipping Name: Chloroform
Hazard Class: 6.1 (Toxic)
UN Number: UN1888
Packing Group: III
Special Provisions: 274 (Packaging authorizations are based on Packing Group III.)

14.2 IMDG (International Maritime Dangerous Goods)
Proper Shipping Name: CHLOROFORM
Hazard Class: 6.1 (Toxic substances)
UN Number: UN1888
Packing Group: III
Marine Pollutant: No
EMS Code: F-A, S-B (Fire, Spillage) *[Note: Specific to toxic substances, not flammables]*

14.3 IATA (International Air Transport Association)
Proper Shipping Name: Chloroform
Hazard Class: 6.1 (Toxic)
UN Number: UN1888
Packing Group: III
Passenger Aircraft Max Net Qty per Package: 1 L
Cargo Aircraft Max Net Qty per Package: 30 L

14.4 Special Transport Conditions
Temperature Control: Not required (store/ship below 30°C recommended)
Ventilation: Keep container tightly closed and ensure good ventilation during handling and transport. Vapors are heavier than air and may accumulate in low-lying spaces, especially in enclosed transport vehicles.
Segregation: Keep away from foodstuffs.

15. REGULATORY INFORMATION

15.1 U.S. Federal Regulations
EPA Regulations:
CERCLA (Superfund) [40 CFR 302.4]: Reportable Quantity (RQ): 10 lbs (4.54 kg) – Immediate release reporting to NRC (1-800-424-8802) required if this quantity is exceeded.
RCRA [40 CFR 261]:
Waste Codes: U044 (Chloroform, Listed Waste), D022 (Toxic Waste).
Land Disposal Restrictions (LDR): Must comply with treatment standards in 40 CFR Part 268.
TSCA: All components are listed on the TSCA Inventory.
SARA Title III (EPCRA):
Section 311/312: Immediate (Acute) Health Hazard, Chronic Health Hazard, Fire Hazard (if applicable).
Section 313 [40 CFR 372.65]: Chloroform (CAS 67-66-3) is listed and subject to Toxic Release Inventory (TRI) reporting if annual thresholds are met.

OSHA:

Hazard Communication Standard (HCS 2012): Classified as Carcinogenicity Category 1B, Acute Toxicity (Oral, Dermal, Inhalation) Category 3, Skin Irritation Category 2, Eye Irritation Category 2, STOT-SE Category 3, STOT-RE Category 1, Aspiration Hazard Category 1.
Permissible Exposure Limit (PEL): 50 ppm Ceiling (240 mg/m^3).

15.2 U.S. State Regulations
California Prop 65: Listed – Chloroform is known to the State of California to cause cancer.
Right-to-Know Lists:
New Jersey RTK: Listed as a hazardous substance (N.J.A.C. 7:1G)
Massachusetts RTK: Listed (M.G.L. c. 111F)
Pennsylvania RTK: Listed (35 P.S. § 7302)
Illinois RTK: Listed

16 OTHER INFO:

16.1 Document Control
Original Preparation Date: March 23, 2006

Latest Revision Date: September 19, 2025
Revision Summary: Updated to align with GHS Revision 7 standards and current regulatory requirements.

16.2 Disclaimer:
The information contained herein is accurate to the best of TEDIA COMPANY LLC's knowledge and complies with applicable regulations as of the revision date. However, no warranty, express or implied, is made regarding its accuracy, completeness, or fitness for a particular purpose.

16.3 User Responsibility:
It is the responsibility of the user to: Verify compliance with local, state, federal, and international regulations before use. Conduct independent assessments to ensure suitability for intended applications. Implement appropriate safety, health, and environmental controls.