

SAFETY DATA SHEET

M47011 - North America - EN



CHLOROFORM (ALL GRADES)

SDS No.: M47011

Rev. Date: 29-Sep-2020

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company Identification:	Occidental Chemical Corporation 14555 Dallas Parkway, Suite 400 Dallas, Texas 75254-4300
24 Hour Emergency Telephone Number:	1-800-733-3665 (USA); CANUTEC (Canada): 1-613-996-6666; CHEMTREC (within USA and Canada): 1-800-424-9300; CHEMTREC (outside USA and Canada): +1 703-527-3887; CHEMTREC Contract No: CCN16186
To Request an SDS:	MSDS@oxy.com or 1-972-404-3245
Customer Service:	1-800-752-5151 or 1-972-404-3700
Product Identifier:	CHLOROFORM; CHLOROFORM TECHNICAL GRADE; CHLOROFORM FLUOROCARBON GRADE; CHLOROFORM ALCOHOL STABILIZED GRADE
Trade Name:	Chloroform; Chloroform Technical Grade; Chloroform Fluorocarbon Grade; Chloroform Alcohol Stabilized Grade
Synonyms:	METHYL TRICHLORIDE; FORMYL TRICHLORIDE; METHANE TRICHLORIDE; METHENYL TRICHLORIDE; TRICHLOROFORM; TRICHLOROMETHANE
Product Use:	This substance is used in the following products: laboratory chemicals. This substance has an industrial use resulting in manufacture of another substance (use as chemical intermediate). FOR USE IN INDUSTRIAL INSTALLATIONS ONLY. Used as a chemical intermediate in industrial facilities that manufacturer refrigerants, dyes, plastics, and resins.
Restrictions on Use (United States):	Chloroform may NOT be used as an ingredient in cosmetic products or food packaging. In addition, all drug products containing chloroform have been removed from the market, and a new drug application is required for approval. For

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cosmetic products, the regulation makes an exception for residual amounts, in certain cases, from its use as a processing solvent during manufacture, or as a byproduct from the synthesis of an ingredient (21 CFR 700.18).

Restrictions on Use (EU): FOR INDUSTRIAL USE ONLY. Chloroform use is restricted in the EU and shall not be placed on the market, or used, as substances or as constituents of other substances, or in mixtures in concentrations equal to or greater than 0,1 % by weight, where the substance or mixture is intended for supply to the general public and/or is intended for diffusive applications such as in surface cleaning and cleaning of fabric.

Other Global Restrictions on Use: FOR USE IN INDUSTRIAL INSTALLATIONS ONLY. Other restrictions on use based on local, regional, or national regulations may exist and must be determined on a case-by-case basis.

Chemical Family: Chlorinated Organics

Note: The Alcohol Stabilized Grade contains small amounts of ethanol as a stabilizer. The Technical and Fluorocarbon Grades do not.

SECTION 2. HAZARDS IDENTIFICATION

OSHA REGULATORY STATUS: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

EMERGENCY OVERVIEW:

Color: Colorless
Physical State: Liquid
Appearance: Clear
Odor: Mildly sweet odor, Pleasant, etheric
Signal Word: **DANGER**

MAJOR HEALTH HAZARDS: HARMFUL IF SWALLOWED. CAUSES SKIN IRRITATION. CAUSES SERIOUS EYE IRRITATION. MAY BE HARMFUL IF INHALED. MAY CAUSE DROWSINESS OR DIZZINESS. SUSPECTED OF CAUSING CANCER. SUSPECTED OF DAMAGING FERTILITY OR THE UNBORN CHILD. CAUSES DAMAGE TO LIVER, KIDNEYS, AND HEART. MAY CAUSE DAMAGE TO LIVER AND KIDNEYS THROUGH PROLONGED OR REPEATED EXPOSURE. THIS MATERIAL IS A POTENTIAL ENDOCRINE DISRUPTOR. IF INGESTED MAY BE AN ASPIRATION HAZARD.

AQUATIC TOXICITY: HARMFUL TO AQUATIC LIFE WITH LONG LASTING EFFECTS, FOR CHRONIC

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EXPOSURES.

PRECAUTIONARY STATEMENTS: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist, vapors, or spray. Wash skin and contaminated clothing thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves, protective clothing, eye, and face protection. Avoid release to the environment.

HAZARD CLASSIFICATION:

GHS: CONTACT HAZARD - SKIN:	Category 2 - Causes skin irritation
GHS: CONTACT HAZARD - EYE:	Category 2A - Causes serious eye irritation
GHS: ACUTE TOXICITY - ORAL:	Category 4 - Harmful if swallowed
GHS: TARGET ORGAN TOXICITY (SINGLE EXPOSURE):	Category 1 - Causes damage to liver, kidney, and heart Category 3 - May cause drowsiness or dizziness
GHS: TARGET ORGAN TOXICITY (REPEATED EXPOSURE):	Category 2 - May cause damage to liver and kidney through prolonged or repeated exposure
GHS: CARCINOGENICITY:	Category 2 - Suspected of causing cancer
GHS: REPRODUCTION TOXIN:	Category 2 - Suspected of damaging fertility or the unborn child
HAZARDS NOT OTHERWISE CLASSIFIED (HNOC):	- ACUTE AQUATIC HAZARD - CATEGORY 3: Harmful to aquatic life - ACQUATIC TOXICITY - CHRONIC: Category 3 (Harmful to aquatic life with long lasting effects) - ACUTE TOXICITY - INHALATION (Vapor) Category 5: MAY BE HARMFUL IF INHALED

GHS SYMBOL: Exclamation mark, Health hazards



GHS SIGNAL WORD: DANGER

GHS HAZARD STATEMENTS:

GHS - Health Hazard Statement(s) -

- Harmful if swallowed
- Causes skin irritation
- Causes serious eye irritation
- May cause drowsiness or dizziness
- Suspected of causing cancer
- Suspected of damaging fertility or the unborn child
- Causes damage to liver, kidneys, and heart
- May cause damage to liver and kidneys through prolonged and repeated exposure

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Additional Hazards - GHS Hazards Not Otherwise Classified (HNOC):

- ACUTE AQUATIC HAZARD - CATEGORY 3: Harmful to aquatic life
- CHRONIC AQUATIC HAZARD - CATEGORY 3: Harmful to aquatic life with long lasting effects
- ACUTE TOXICITY - INHALATION (Vapor) Category 5: MAY BE HARMFUL IF INHALED

GHS - Precautionary Statement(s) - Prevention

- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Do not breathe mist, vapors, or spray
- Wash skin and contaminated clothing thoroughly after handling
- Do not eat, drink or smoke when using this product
- Use only outdoors or in a well-ventilated area
- Wear protective gloves, protective clothing, eye, and face protection
- Avoid release to the environment

GHS - Precautionary Statement(s) - Response

- IF SWALLOWED: Call a POISON CENTER OR LICENSED HEALTH CARE PROVIDER if you feel unwell
- Rinse mouth if ingested
- IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing
- IF INHALED: Call a POISON CENTER OR LICENSED HEALTH CARE PROVIDER if you feel unwell
- IF ON SKIN: Wash with plenty of soap and water
- If skin irritation occurs: Get medical advice/attention
- Take off immediately all contaminated clothing and wash it before reuse
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- If eye irritation persists: Get medical advice/attention
- IF exposed: Call a POISON CENTER OR LICENSED HEALTH CARE PROVIDER

GHS - Precautionary Statement(s) - Storage

- Store in a well-ventilated place. Keep container tightly closed
- Store in a secure manner

GHS - Precautionary Statement(s) - Disposal

- Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations

Hazard Not Otherwise Classified (HNOC)-Health

- May be harmful if inhaled
- Potential endocrine disruptor
- ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE

See Section 11: TOXICOLOGICAL INFORMATION

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonym(s) for Product: METHYL TRICHLORIDE; FORMYL TRICHLORIDE; METHANE TRICHLORIDE; METHENYL TRICHLORIDE; TRICHLOROFORM; TRICHLOROMETHANE

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Notes: *The Alcohol Stabilized Grade contains small amounts of ethanol as a stabilizer. The Technical and Fluorocarbon Grades do not.*

Component	CAS Number	Percent [%]
Chloroform	67-66-3	> 99
Ethyl Alcohol (Alcohol Stabilized Grade Only)	64-17-5	< 1

SECTION 4. FIRST AID MEASURES

INHALATION: IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing. IF INHALED: Call a POISON CENTER OR LICENSED HEALTH CARE PROVIDER if you feel unwell.

SKIN CONTACT: If on skin or hair, wash with plenty of soap and water. If skin irritation occurs: Get medical advice/ attention. Take off contaminated clothing and wash before reuse.

EYE CONTACT: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

INGESTION: Rinse mouth if ingested. Call a POISON CENTER OR LICENSED HEALTH CARE PROVIDER if you feel unwell.

Most Important Symptoms/Effects (Acute and Delayed):

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Acute Symptoms/Effects:

Inhalation (Breathing): Respiratory System Effects: Inhalation of this material may cause acute respiratory depression with central nervous system (CNS) depression, resulting in lightheadedness to possibly rapid loss of consciousness. High concentrations can cause cardiac arrhythmias and cardiac arrest due to sensitization of the myocardium to epinephrine.

Skin: Skin Irritation: Exposure to skin may cause redness, dryness, localized edema, ulcerations. This material may be absorbed across the skin causing systemic effects. Chloroform absorbed through the skin and into the blood is expected to be metabolized and to cause toxicity in much the same way as chloroform absorbed by other exposure routes.

Eye: Eye Irritation. Eye exposure may cause irritation, tearing, conjunctivitis, corneal edema, cornea epithelial damage.

Ingestion (Swallowing): Gastrointestinal System Effects: May be fatal if swallowed.

Delayed Symptoms/Effects:

- Respiratory System Effects: Chemical pneumonitis and delayed pulmonary edema
- Skin: Repeated and prolonged skin contact may cause a chronic dermatitis
- May cause delayed hepatotoxicity
- Specific treatment: See section 4 of the safety data sheet (SDS)
- Acute renal toxicity has been rarely reported
- Suspected of causing cancer

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- Suspected of damaging fertility or the unborn child

Target Organ Effects: Heart. Liver. Kidney.

Protection of First-Aiders: Protect against vapor/gas exposure. Do not breathe gas, fumes, vapor, mist, or spray. Protect against liquid contamination/frostbite. Avoid contact with skin and eyes. Use personal protective equipment. Refer to Section 8 for specific personal protective equipment recommendations.

Notes to Physician: For ingestion, nasogastric aspiration is recommended if volume ingested is of sufficient volume to aspirate. Protect the airway, onset of respiratory depression may be rapid. Consider EKG monitoring to detect cardiac arrhythmias. Monitor blood pressure for hypotension. Avoid catecholamines, especially in the presence of arrhythmias. For very high exposures, (intentional, solvent abuse), oxygen, advanced cardiac life support, intubation and volume support may be required. For skin exposures, wash the area with soap and water, and treat any irritation symptomatically. Thorough decontamination of the eye is important. N-acetylcysteine has been used clinically in patients with chloroform-induced liver dysfunction, based upon the similarity between the mechanism of chloroform and acetaminophen hepatotoxicity. This is based upon 2 case reports, 1 dosed at 600 mg/day, while a second mirrored dosing recommended for acetaminophen toxicity: 150 mg/kg over 1 hour, 50 mg/kg over 4 hours, then an IV infusion of 6.25 mg/kg/h. The clinical efficacy and benefit of N-acetylcysteine for chloroform hepatotoxicity is currently unproven. See section 11 for additional toxicology information.

Interaction with Other Chemicals Which Enhance Toxicity: Alcohol may enhance toxic effects. May potentiate other agents that cause central nervous system (CNS) and respiratory system depression, such as alcohol, opiates. Liver toxicity may be enhanced by other agents that cause liver damage, such as alcohol, acetaminophen. Catechol amines may potentiate arrhythmias.

Medical Conditions Aggravated by Exposure: May increase potential for cardiac arrhythmia. Persons with alcoholism, kidney disorders, liver disorders, or central nervous system disorders may be more susceptible to toxicity.

SECTION 5. FIRE-FIGHTING MEASURES

Fire Hazard: Negligible fire hazard.

Explosive properties: This product does not contribute to the spreading of flames, nor is it combustible or explosive.

Extinguishing Media: Use media appropriate for surrounding fire.

Specific Hazards: Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.

Unusual Hazards: Containers may explode when heated. Runoff may pollute waterways.

Fire Fighting: Wear NIOSH approved positive-pressure self-contained breathing apparatus operated in pressure demand mode. Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Flood with fine water spray. Do not scatter spilled material with high-pressure water streams. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Keep water runoff out

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of water supplies and sewers (see Section 6 of the SDS).

Component	Immediately Dangerous to Life/ Health (IDLH)
Chloroform 67-66-3	500 ppm IDLH
Ethyl Alcohol (Alcohol Stabilized Grade Only) 64-17-5	3300 ppm IDLH

Hazardous Combustion Products: Thermal decomposition or combustion products: hydrogen chloride, chlorine, phosgene, oxides of carbon

Sensitivity to Mechanical Impact: Not sensitive.

Sensitivity to Static Discharge: Not sensitive.

Lower Flammability Level (air): Not flammable

Upper Flammability Level (air): Not flammable

Flash point: None

Auto-ignition Temperature: >1832 °F (>1000 °C)

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Keep unnecessary and unprotected persons away. Isolate hazard area and deny entry. Evacuation of surrounding area may be necessary for large spills. Do not get in eyes, on skin or on clothing. Do not breathe dust, fume, gas, mist, vapors, or spray. Most vapors are heavier than air and will spread along ground and collect in low or confined areas (drains, basements, tanks). Ventilate closed spaces before entering. Wear appropriate personal protective equipment recommended in Section 8, Exposure Controls / Personal Protection, of the SDS.

Personal Protective Equipment: See section 8 for information on personal protective equipment.

Emergency Procedures: For other than minor leaks, immediately implement the facility's predetermined emergency response plan. Restrict access to the area until cleanup is complete. Prevent material and runoff from entering sewers and waterways if it can be done safely well ahead of the release. Ventilate confined area if possible, without placing personnel at risk. Cleanup personnel must wear proper protective equipment. Notify all downstream water users of possible contamination.

Environmental Precautions: Avoid discharge into drains, surface water or groundwater. Keep out of water supplies, sewers and soil. Releases should be reported, if required, to appropriate agencies.

Methods and Materials for Containment, Confinement, and/or Abatement: Stop leak if possible without personal risk. Shut off ventilation system if needed. Ventilate closed spaces before entering. Completely contain spilled materials with dikes, sandbags, etc. Remove contaminated soil or collect with appropriate absorbent and place into suitable container. Keep container tightly closed. Liquid material may be removed with a properly rated vacuum

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truck. Dispose of in accordance with all applicable regulations. See Section 13, Disposal considerations, for additional information.

Recovery: In case of spill or leak, stop the leak as soon as possible. Shut off ventilation systems to occupied areas where they can be impacted by vapors picked up by the intake systems. Ventilate closed spaces before entering. Liquid material may be removed with a properly rated vacuum truck. Small and large spills: Contain spilled material if possible. After containment, collect the spilled material and transfer to a chemical waste area. Spills must be surrounded by absorbent material in order to delimit its extension, then complete its absorption. The recovered material must be placed in a suitable container and labelled with corresponding identification.

Neutralization: No additional information available.

Final Disposal: For waste disposal, see section 13.

Additional Disaster Prevention Measures: No information available.

SECTION 7. HANDLING AND STORAGE

Handling:

Precautions for Safe Handling: Review and adhere to requirements in 49 CFR 177.834 for unloading product. Most vapors are heavier than air and will spread along ground and collect in low or confined areas (drains, basements, tanks). Before entering tanks or opening service lines that may have contained chlorinated organics, they should be completely emptied and checked for vapors before performing maintenance activities. Never enter a confined space (which includes tanks or pits) without following proper entry procedures such as 29 CFR 1910.146.

Technical measures/precautions: Chlorinated organics handling equipment must not be constructed of any reactive metals such as aluminum, zinc, brass or magnesium alloys. Neoprene and natural rubber parts cannot be used for chlorinated organic service. Gaskets used in the service of chlorinated organics may be constructed of PTFE or Teflon® envelope gasket material or graphite with stainless steel metal inserts. Rubber-based products such as neoprene or Buna N gasketing should not be used. If a composition differing from those mentioned above is to be used, it must first be tested with the specific chlorinated organic product to ensure compatibility.

Other precautions: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Prevention of contact: Do not breathe mist, vapor, or spray. Wash skin and contaminated clothing thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves, protective clothing, eye, and face protection.

Storage:

Safe Storage Conditions: Store and handle in accordance with all current regulations and standards. Keep container tightly closed and properly labeled. Store in a cool, dry area. Store in a well-ventilated area. Prevent water or moist air from entering storage tanks or containers. Do not enter confined spaces without following proper confined space entry procedures. Do not store in aluminum container or use aluminum fittings or transfer lines. Do not reuse drum without recycling or reconditioning in accordance with any applicable federal, state or local laws. Do not use cutting or welding torches, open flames or electric arcs on empty or full containers. Keep separated from incompatible substances (see Section 10 of SDS).

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Technical measures: All storage facilities should be designed to protect the environment from contamination through the use of secondary containment. Typical secondary containment systems employ impermeable surfaces such as double-walled tanks, sumps, dikes (non-earth). All storage tanks should be diked to contain the tank contents in the event of a spill or tank rupture. They should be large enough to contain the tank's volume and an additional appropriate volume as a safety factor. Containment volumes and diking requirements are often defined and mandated by individual states and localities. Regulations must be reviewed prior to construction. Always store chlorinated organic drums in areas equipped with secondary containment systems. Containment systems should be adequate to hold 110% of the largest expected amount of drummed product to be stored, and should be impermeable to chlorinated organics.

Incompatible Substances: bases, reactive metals, metallic fines or powders, oxidizing materials, halogens, acetone, aluminum, disilane, magnesium, potassium, sodium.

Packaging Material: Bulk storage containers should be constructed of either carbon or stainless steel. Aluminum or fiberglass reinforced plastic storage tanks are prohibited for chlorinated organic service. Storage tanks should not be constructed of, nor contain, any non-compatible plastic components. The storage tanks exterior should be cleaned, primed and painted with a white or aluminum colored paint to aid in keeping the tank and its contents cool.

Additional Information: Keep containers tightly closed in a cool, well-ventilated place.
Keep containers tightly closed in a cool, well-ventilated place

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION**REGULATORY EXPOSURE LIMIT(S):**

Listed below for the product components that have regulatory occupational exposure limits (OEL's).

Component	OSHA Final PEL TWA	OSHA Final PEL STEL	OSHA Final PEL Ceiling
Chloroform 67-66-3 (> 99 %)	-----	-----	50 ppm 240 mg/m ³
Ethyl Alcohol (Alcohol Stabilized Grade Only) 64-17-5 (< 1 %)	1000 ppm 1900 mg/m ³	-----	-----

OEL: Occupational Exposure Limit; OSHA: United States Occupational Safety and Health Administration; PEL: Permissible Exposure Limit; TWA: Time Weighted Average; STEL: Short Term Exposure Limit
OSHA Ceiling values indicate the exposure limit, which at no time shall be exceed. Instantaneous monitoring is the preferred method to determine compliance with OSHA Ceiling values. If instantaneous monitoring is not feasible, then the ceiling shall be assessed as a 15-minute time weighted average exposure which shall not be exceeded at any time during the working day [29CFR1910.1000(a)(1)]

Component	Canada - TWAs	Canada - STELs	Canada - Ceilings
Chloroform 67-66-3	Ontario - 10 ppm (TWA) Alberta - 10 ppm (TWA) Alberta - 49 mg/m ³ (TWA)	-----	-----

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Component	Canada - TWAs	Canada - STELs	Canada - Ceilings
	British Columbia - 2 ppm (TWA)		
Ethyl Alcohol (Alcohol Stabilized Grade Only) 64-17-5	Alberta - 1000 ppm (TWA) Alberta - 1880 mg/m ³ (TWA)	Ontario - 1000 ppm (STEL)	-----

NON-REGULATORY EXPOSURE LIMIT(S):

Listed below for the product components that have non-regulatory occupational exposure limits (OELs).

Component	ACGIH TWA	ACGIH STEL	ACGIH Ceiling	Skin Absorption - ACGIH	OSHA TWA (Vacated)	OSHA STEL (Vacated)	OSHA Ceiling (Vacated)
Chloroform	10 ppm	-----	-----	-----	2 ppm 9.78 mg/m ³	-----	-----
Ethyl Alcohol (Alcohol Stabilized Grade Only)	-----	1000 ppm	-----	-----	1000 ppm 1900 mg/m ³	-----	-----

- The Non-Regulatory United States Occupational Safety and Health Administration (OSHA) limits, if shown, are the Vacated 1989 PEL's (vacated by 58 FR 35338, June 30, 1993).

- The American Conference of Governmental Industrial Hygienists (ACGIH) is a voluntary organization of professional industrial hygiene personnel in government or educational institutions in the United States. The ACGIH develops and publishes recommended occupational exposure limits each year called Threshold Limit Values (TLVs) for hundreds of chemicals, physical agents, and biological exposure indices.

Additional Advice: SEE SECTION 11 FOR ADDITIONAL TOXICOLOGICAL INFORMATION.

ENGINEERING CONTROLS: Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

PERSONAL PROTECTIVE EQUIPMENT:

Eye Protection: Wear chemical safety goggles with a face shield to protect against eye and skin contact when appropriate. Provide an emergency eyewash fountain and quick drench shower in the immediate work area.

Skin and Body Protection: Wear chemical resistant clothing to prevent skin contact. Thoroughly clean and dry contaminated clothing before reuse. Discard contaminated leather goods.

Hand Protection: Wear appropriate chemical resistant gloves. Consult a glove supplier for assistance in selecting an appropriate chemical resistant glove.

Protective Material Types: Viton®, Polyvinyl alcohol (PVA), Polyethylene (PE)

Respiratory Protection: Where vapor concentration exceeds or is likely to exceed applicable exposure limits, a NIOSH approved respirator is required. A NIOSH approved self-contained positive pressure breathing apparatus with full-face piece or airline respirator is required for spills, emergencies and/or IDLH concentrations. A respiratory protection program that meets 29 CFR 1910.134 must be followed whenever workplace conditions warrant use of a respirator.

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Component	Immediately Dangerous to Life/ Health (IDLH)
Chloroform 67-66-3	500 ppm IDLH
Ethyl Alcohol (Alcohol Stabilized Grade Only) 64-17-5	3300 ppm IDLH

HYGIENE MEASURES: An emergency eyewash fountain and quick drench shower should be provided in the immediate work area.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Colorless
Odor:	Mildly sweet odor Pleasant, etheric
Molecular Weight:	119.38
Molecular Formula:	CHCl ₃
Chemical Family:	Chlorinated Organics
pH:	Not applicable
Melting Point/Range:	-63.41°C
Freezing Point/Range:	-83 ° F (-63.9 ° C)
Boiling point °C	61.12 °C
Flash point:	None
Vapor Pressure:	160 mmHg @ 20° C 197 mmHg @ 25° C
Vapor Density (air=1):	4.1
Relative Density/Specific Gravity (water=1):	1.49 @ 25 ° C
Density:	No data available
Water Solubility:	0.8% @ 25 °C
Partition Coefficient (n-octanol/water):	log Kow = 1.97
Auto-ignition Temperature:	>1832 °F (>1000 °C)
Decomposition Temperature:	No data available
Odor Threshold [ppm]:	85 ppm (ACGIH 2007) 205-307 ppm (causes olfactory fatigue)
Evaporation Rate (ether=1):	0.56
Volatility:	100%
Flammability (solid, gas):	Not flammable
Lower Flammability Level (air):	Not flammable
Upper Flammability Level (air):	Not flammable
Viscosity:	5.63 mP (dynamic) @ 20 °C; 5.10 mP (dynamic) @ 30 °C

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability: Stable at normal temperatures and pressures.

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Reactivity: Not reactive under normal temperatures and pressures.

Possibility of Hazardous Reactions: Keep away from heat. Containers may rupture or explode if exposed to heat. Will attack some forms of plastics, rubber, and coatings. Avoid contact with incompatible substances and conditions due to generation of phosgene and other toxic and irritating substances.

Conditions to Avoid (e.g., static discharge, shock, or vibration): None known.

Incompatible Substances: bases, reactive metals, metallic fines or powders, oxidizing materials, halogens, acetone, aluminum, disilane, magnesium, potassium, sodium.

Hazardous Decomposition Products: Thermal decomposition or combustion products: hydrogen chloride, chlorine, phosgene, oxides of carbon.

Hazardous Polymerization: Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS:

TOXICITY:

Chloroform was used as an anesthetic for humans (10,000 - 22,500 ppm), but is no longer recommended for this use due to liver and kidney damage. Intentional abuse can result in significant toxicity. Respiratory depression, with central nervous system depression and delayed hepatotoxicity are indicative of chloroform poisoning. Symptoms of central nervous system depression have been reported in workers at concentrations of 80-240 ppm. Dizziness, vertigo, fatigue, and headache have been reported from exposure to 920 ppm for approximately 3 minutes. Exposure to levels of 1500-2000 ppm have been reported to cause slight anesthesia. Irregular heartbeat may occur from exposure to levels of 8000 ppm or higher. This material is likely to be fatal after 5-10 minutes of 25,000 ppm.

ACUTE TOXICITY:

Eye contact: Eye contact may cause irritation, conjunctivitis, tearing, swelling, eye pain, corneal edema, blurred vision, cornea epithelial damage.

Skin contact: Skin contact may cause irritation, redness, dryness, localized edema, ulcerations after significant long-term exposure.

Inhalation: Not a pulmonary irritant. May cause respiratory depression. May cause slightly sweet odor on breath. May cause central nervous system (CNS) depression resulting in lightheadedness to rapid loss of consciousness. Moderate to severe exposures may cause cardiac arrhythmias.

Ingestion: May cause gastrointestinal effects, liver damage, kidney damage, unconsciousness and death.

CHRONIC TOXICITY:

Chronic Effects: Increased irritability and decreased concentration was reported in female workers exposed to levels of 77 ppm or greater in the workplace. Deliberate abuse has been associated with depression, hallucinations, delirium and degenerative changes in central and peripheral nervous system tissues. May be excreted in breast milk. Repeated exposure has been associated with liver and kidney damage in animals. In addition, nasal cavity changes were observed in rats and mice exposed for 7 days. Long-term ingestion may

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cause liver damage, reproductive effects and cancer. Interstitial pneumonitis was observed in male rats and in rabbits exposed to this material for six months. This effect was not observed in other species.

SIGNS AND SYMPTOMS OF EXPOSURE:

Inhalation (Breathing): Respiratory System Effects: Inhalation of this material may cause acute respiratory depression with central nervous system (CNS) depression, resulting in lightheadedness to possibly rapid loss of consciousness. High concentrations can cause cardiac arrhythmias and cardiac arrest due to sensitization of the myocardium to epinephrine.

Skin: Skin Irritation: Exposure to skin may cause redness, dryness, localized edema, ulcerations. This material may be absorbed across the skin causing systemic effects. Chloroform absorbed through the skin and into the blood is expected to be metabolized and to cause toxicity in much the same way as chloroform absorbed by other exposure routes.

Eye: Eye Irritation. Eye exposure may cause irritation, tearing, conjunctivitis, corneal edema, cornea epithelial damage.

Ingestion (Swallowing): Gastrointestinal System Effects: May be fatal if swallowed.

Interaction with Other Chemicals Which Enhance Toxicity: Alcohol may enhance toxic effects. May potentiate other agents that cause central nervous system (CNS) and respiratory system depression, such as alcohol, opiates. Liver toxicity may be enhanced by other agents that cause liver damage, such as alcohol, acetaminophen. Catechol amines may potentiate arrhythmias.

GHS HEALTH HAZARDS:

GHS: CONTACT HAZARD - SKIN: Category 2 - Causes skin irritation

GHS: CONTACT HAZARD - EYE: Category 2A - Causes serious eye irritation

GHS: ACUTE TOXICITY - ORAL: Category 4 - Harmful if swallowed

GHS: ACUTE TOXICITY - INHALATION: Category 5 - May be harmful if inhaled

GHS: TARGET ORGAN TOXICITY (SINGLE EXPOSURE): Category 1 - Causes damage to liver, kidney, and heart

Category 3 - May cause drowsiness or dizziness

GHS: CARCINOGENICITY: Category 2 - Suspected of causing cancer

GHS: REPRODUCTION TOXIN: Category 2 - Suspected of damaging fertility or the unborn child

TOXICITY DATA:**PRODUCT TOXICITY DATA:**

LD50 Oral:	LD50 Dermal:	LC50 Inhalation:
300-695 mg/kg oral-rat LD50	> 20 gm/kg skin-rabbit LD50	47,702 mg/m ³ (4 hr - Rat)

COMPONENT TOXICITY DATA:

Component	Oral LD50	Dermal LD50	Inhalation LC50
Chloroform	450 mg/kg (Rat)	>20 g/kg (Rabbit)	47702 mg/m ³ (4-h Rat)
Ethyl Alcohol (Alcohol Stabilized Grade Only)	7060 mg/kg (Rat)		124.7 mg/L (4-h Rat)

Eye Irritation/Corrosion: This product is classified as causing serious eye irritation (Category 2) per GHS criteria.

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Skin Irritation/Corrosion: The product is classified as cutaneous irritant (Category 2), according to GHS classification criteria.

Skin Absorbent / Dermal Route: NO.

CARCINOGENICITY: Studies have shown increases in kidney and liver cancer in rodents. Suspected of causing cancer to bladder, liver, and kidneys. Classified as Category 2 under GHS (suspected of causing cancer).

SPECIFIC TARGET ORGAN TOXICITY (Single Exposure): Category 1 - Causes damage to liver, kidney, and heart. Category 3 - Narcotic Effects.

SPECIFIC TARGET ORGAN TOXICITY (Repeated or Prolonged Exposure): Category 2 - Liver, Kidneys.

INHALATION HAZARD: MAY BE HARMFUL IF INHALED. Breathing this material may cause central nervous system depression with symptoms including nausea, headache, dizziness, fatigue, drowsiness, or unconsciousness.

GERM CELL/IN-VITRO MUTAGENICITY: Not classified as a mutagen per GHS criteria. This material has tested positive in one or more in vitro mutagenicity studies. However, the majority genotoxicity data have demonstrated a pattern of negative results.

REPRODUCTIVE TOXICITY: Classified as Category 2 under GHS (may cause damage to fertility or the unborn child).

DEVELOPMENTAL TOXICITY: Category 2 - Suspected of damaging fertility or the unborn child. This material may cause harm to the human fetus based on tests with laboratory animals. Studies of workers have not shown any association between exposure and adverse effects on reproduction or pregnancy outcome. This material crosses the placenta rapidly and enters fetal circulation. Developmental studies in experimental animals have produced a variety of results, some indicating fetotoxicity and weak teratogenicity. Animal studies indicate that inhalation exposure may cause reproductive effects in rodents. Miscarriages occurred in rats and mice that breathed air containing elevated levels (30 to 300 ppm) of chloroform during pregnancy and in rats that consumed chloroform during pregnancy. Abnormal sperm were found in mice that breathed air containing elevated levels (400 ppm) of chloroform for a few days. Offspring of rats and mice that breathed chloroform during pregnancy had birth defects.

ASPIRATION HAZARD: Aspiration of material into the lungs may cause chemical pneumonitis, which may be fatal. Possible aspiration hazard.

TOXICOKINETICS: The toxicokinetics of chloroform (CAS # 67-66-3, CHCl₃) was systematically evaluated and interpreted in various species including B6C3F1 mice, Fischer 344 and male Osborne-Mendel rats, and male Syrian Golden hamsters for development and validation of a physiologically-based pharmacokinetic (PB-PK) model of prospective dose-, species- and route-specific disposition of CHCl₃. This model assumes total chloroform metabolism within target organs, liver and kidney, solely by a mixed function oxidase (MFO) metabolic pathway following Michaelis-Menten kinetics.

METABOLISM: A large number of studies support the conclusion that metabolism of chloroform is required for toxicity.

PATHOGENICITY AND ACUTE INFECTIOUSNESS (ORAL, DERMAL, AND INHALATION): Not applicable.

ENDOCRINE DISRUPTOR: Chloroform is listed on The Endocrine Disruptors Exchange's (TEDX) List of Potential Endocrine Disruptors database of chemicals with the potential to affect the endocrine system. Every chemical on the TEDX List has one or more verified citations published, accessible, primary scientific research demonstrating effects

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on the endocrine system.

NEUROTOXICITY: Breathing this material may cause central nervous system depression with symptoms including nausea, headache, dizziness, fatigue, drowsiness, or unconsciousness. Long term exposure to concentrations of 20-200 ppm of chloroform produce mainly neurological effects, with increased incidence of symptoms such as fatigue, nausea, vomiting, lassitude, dry mouth, and anorexia.

IMMUNOTOXICITY: Chloroform administered via drinking water affects body weight and selected hematological parameters at high dose levels; however, overall immune responses, as measured in several tests for immune function, are not compromised.

Hazard Not Otherwise Classified (HNOC)-Health

- May be harmful if inhaled
- Potential endocrine disruptor
- ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE

SECTION 12. ECOLOGICAL INFORMATION**ECOTOXICITY (EC, IC, and LC):**

Component:	Freshwater Fish:	Invertebrate Toxicity:	Algae Toxicity:	Other Toxicity:
Chloroform	*Oncornhyncus mykiss 96hr LC50: 18 mg/l *Lepomis macrochirus 96 hr LC50: 18 mg/l *Micropterus salmoides 96 hr LC50: 51 mg/l *Ictalurus punctatus 96 hr LC50: 75 mg/l	*Daphnia magna 48 hr EC50: 29-79 mg/l	*EC50 Desmodesmus subspicatus (48 h) =560 mg/L	No data available
Ethyl Alcohol (Alcohol Stabilized Grade Only)	*LC50 Oncorhynchus mykiss: 12.0 - 16.0 mL/L 96h static *LC50 Pimephales promelas: 100 mg/L 96h static *LC50 Pimephales promelas: 13400 - 15100 mg/L 96h flow-through	*LC50 Daphnia magna: 9268 - 14221 mg/L 48h *EC50 Daphnia magna: 2 mg/L 48h *EC50 Daphnia magna: 10800 mg/L 24h	No data available	*LC50 Eisenia foetida (48 h filter paper) 0.1 - 1 mg/cm2

Fish Toxicity:

Oncornhyncus mykiss 96hr LC50: 18 mg/l
Lepomis macrochirus 96 hr LC50: 18 mg/l
Micropterus salmoides 96 hr LC50: 51 mg/l
Ictalurus punctatus 96 hr LC50: 75 mg/l

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Algae Toxicity:

Chlamydomonas rein. 72 hr ErC50: 3.6-13.3 mg/l

Invertebrate Toxicity:

Daphnia magna 48 hr EC50: 29-79 mg/l

FATE AND TRANSPORT:

PERSISTENCE: Chloroform has a negligible tropospheric ozone creation potential in the atmosphere. No effect of chloroform can be expected on stratospheric ozone depletion and global warming as half-life of at least one year is necessary to expect such effects. Chloroform is not listed in the substances concerned by the Montreal Protocol on substances affecting the ozone layer.

BIODEGRADATION: As indicated by the Henry's law constant, chloroform entering aquatic systems would be transferred to the atmosphere through volatilization. A half-life of 3.7 hours can be calculated from this constant using a water current of 1 m/sec a wind speed of 3 m/sec and 1 m depth. A field monitoring in the Rhine River gave a half-life of 1.2 days. In the atmosphere, indirect photolysis (reaction with OH radicals) occurs with half-life of approximately 15 to 23 weeks.

BIOCONCENTRATION: Bioconcentration Factor (BCF) values suggest bioconcentration in aquatic organisms is low.

BIOACCUMULATIVE POTENTIAL: Bioaccumulation of chloroform in aquatic species is unlikely in view of its physical, chemical and biological properties. The octanol water partition coefficient is small. Under these conditions the bioaccumulation through the food chain is highly unlikely. The following bioconcentration factors (BCF) have been reported for freshwater fish: Cyprinus Carpio 4-13

Lepomis macrochirus 1.6 – 2.5

Oncorhynchus mykiss 3.34 – 10.34.

MOBILITY IN SOIL: Chloroform is expected to have high to moderate mobility in soil.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste from material:

Reuse or reprocess, if possible. Keep out of water supplies, sewers and soil. Contact a licensed professional waste disposal service to dispose of surplus and non-recyclable solutions. Dispose in accordance with all applicable regulations. If the material is to be incinerated, the chemical incinerator must be equipped with an afterburner (to assure complete combustion to prevent the formation of phosgene) and an acid scrubber (to remove the halo acids produced). All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Report spills if applicable. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN SDS SECTION: Composition Information (FOR UNUSED & UNCONTAMINATED PRODUCT).

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Container Management:

Dispose of container in accordance with applicable local, regional, national, and/or international regulations. Container rinsate must be disposed of in compliance with applicable regulations. Puncture container to avoid re-use.

Contaminated Material:

Contaminated material must be disposed of in a permitted waste management facility. Contaminated packaging must be disposed of as unused product by a licensed / permitted waste disposal service.

SECTION 14. TRANSPORT INFORMATION

LAND TRANSPORT

U.S. DOT 49 CFR 172.101:

UN NUMBER: UN1888
PROPER SHIPPING NAME: Chloroform
HAZARD CLASS/ DIVISION: 6.1
PACKING GROUP: III
LABELING REQUIREMENTS: 6.1
RQ (lbs.): RQ 10 Lbs. (Chloroform)

Special provisions for transport: IB3, N36, T7, TP2.

Packaging Exceptions 153.
Non-bulk Packaging: 203.
Bulk Packaging: 241.

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

UN NUMBER: UN1888
SHIPPING NAME: Chloroform
CLASS OR DIVISION: 6.1
PACKING/RISK GROUP: III
LABELING REQUIREMENTS: 6.1

MARITIME TRANSPORT (IMO / IMDG)

UN NUMBER: UN1888
PROPER SHIPPING NAME: Chloroform
HAZARD CLASS / DIVISION: 6.1
Packing Group: III
LABELING REQUIREMENTS: 6.1

AIR TRANSPORT (ICAO / IATA)

Special Instructions CAO: IATA Certificate for shipping personnel is required

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SECTION 15. REGULATORY INFORMATION**U.S. REGULATIONS****OSHA REGULATORY STATUS:**

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):

If a release is reportable under CERCLA section 103, notify the state emergency response commission and local emergency planning committee. In addition, notify the National Response Center at (800) 424-8802 or (202) 426-2675.

Component	U.S. DOT Hazardous Substances/ RQs	CERCLA Hazardous Substances / RQs	CERCLA Section 302 EHS EPCRA RQs	Section 302 Threshold Planning Quantity (TPQs)
Chloroform 67-66-3 (0 - 99)	10 lbs(RQ)	10 lb(final RQ)	10 lb(EPCRA RQ)	10000 lb TPQ

SARA EHS Chemical (40 CFR 355.30)

If a release is reportable under EPCRA, notify the state emergency response commission and local emergency planning committee. If the TPQ is met, facilities are subject to reporting requirements under EPCRA Sections 311 and 312.

EPCRA SECTIONS 311/312 HAZARD CATEGORIES (40 CFR 370.10):

Acute Health Hazard, Chronic Health Hazard, Extremely Hazardous

SARA HAZARD CATEGORIES ALIGNED WITH GHS (2018):

Health Hazard - Carcinogen
 Health Hazard - Acute Toxin (any route of exposure)
 Health Hazard - Reproductive Toxin
 Health Hazard - Skin Corrosion or Irritation
 Health Hazard - Serious eye damage or eye irritation
 Health Hazard - Specific Target Organ Toxicity (STOT) Single Exposure (SE)
 Health Hazard - Specific Target Organ Toxicity (STOT) Repeat Exposure (RE)
 Health Hazard - Aspiration Hazard
 Health Hazard - HNOX

EPCRA SECTION 313 (40 CFR 372.65):

The following chemicals are listed in 40 CFR 372.65 and may be subject to Community Right-to Know Reporting requirements.

Component	SARA 313 - Emission Reporting	SARA 313 PBT
Chloroform 67-66-3 (0 - 99)	0.1% (de minimis concentration)	Not Listed

DEPARTMENT OF HOMELAND SECURITY (DHS)- Chemical Facility Anti-Terrorism Standards (6 CFR 27):

The following components are regulated under DHS:

Component	DHS - Security Issues	DHS-Sabotage Screening Threshold Qnty.	DHS-Sabotage Min. Conc.	DHS-Theft Screening Threshold Qnty.	DHS-Theft Min. Conc.	DHS-Release Screening Threshold Qnty.	DHS-Release Min. Conc.	CWC Toxic Chemicals:
Chloroform 67-66-3 (0 - 99)	Release - Toxic	Not Listed	Not Listed	Not Listed	Not Listed	20000 lb STQ	1.0%Minimum Concentration	Not Listed

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OSHA PROCESS SAFETY (PSM) (29 CFR 1910.119):

Regulated.

Component	EPA RMP Toxic or Flammable TPQ	PSM - Highly Hazardous Substances, Toxics and Reactives	Flash Point
Ethyl alcohol 64-17-5 (0 - 1)	Not Listed	Not Listed	13°C 17°C 20°C 21°C 22°C 24°C 26°C 29°C 36°C 49°C 62°C
Chloroform 67-66-3 (0 - 99)	Toxic (20000 lb threshold quantity)	Not Listed	

EPA'S CLEAN WATER AND CLEAN AIR ACTS:

Regulated as noted in table below.

Component	Clean Water Act - Priority Pollutants	CAA - ODS CLASS 1 AND CLASS 2	CAA - Volatile Organic Compounds (VOCs) in SOCM	CAA - HON Rule - Organic HAPs	CAA - Hazard Air Pollutants	CAA - Urban HAPs List (Integrated Urban Strategy)	SNAP - Substitutes for ODS	EPA RMP Toxic or Flammable TPQ
Ethyl alcohol	Not Listed	Not Listed	Present	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Chloroform	Present	Not Listed	Present	Present	Present	Present	Not Listed	Toxic (20000 lb threshold quantity)

NATIONAL INVENTORY STATUS**U.S. INVENTORY STATUS: Toxic Substance Control Act (TSCA):**

Component	TSCA Inventory	TSCA ACTIVE LIST	TSCA 12(b)	TSCA - Section 4	TSCA - Section 5	TSCA - Section 6	TSCA - Section 8
Ethyl alcohol 64-17-5	Listed	ACTIVE	Not Listed	Not listed	Not Listed	Not listed	Not listed
Chloroform 67-66-3	Listed	ACTIVE	Not Listed	Not listed	Not Listed	Not listed	Listed

CANADIAN CHEMICAL INVENTORY: All components of this product are listed on either the DSL or the NDSL.

Component	DSL	NDSL
Ethyl alcohol 64-17-5 (0 - 1)	Listed	Not Listed
Chloroform 67-66-3 (0 - 99)	Listed	Not Listed

STATE REGULATIONS**California Proposition 65:**

This product contains a chemical known to the State of California to cause cancer, and/or birth defects, and/or other reproductive harm as listed under Proposition 65 State Drinking Water and Toxic Enforcement Act. For additional information, contact OxyChem Technical Services.

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Component	California Proposition 65 Cancer WARNING:	California Proposition 65 CRT List - Male reproductive toxin:	California Proposition 65 CRT List - Female reproductive toxin:	Massachusetts Right to Know Hazardous Substance List	Rhode Island Right to Know Hazardous Substance List
Ethyl alcohol	Listed developmental toxicity	Not Listed	Not Listed	Listed	Listed
Chloroform	Listed developmental toxicity	Not Listed	Not Listed	Listed	Listed

Component	New Jersey Right to Know Hazardous Substance List	New Jersey Special Health Hazards Substance List	New Jersey - Environmental Hazardous Substance List	Pennsylvania Right to Know Hazardous Substance List	Pennsylvania Right to Know Special Hazardous Substances	Pennsylvania Right to Know Special Hazardous Substances	Pennsylvania Right to Know Environmental Hazard List
Ethyl alcohol	0844	flammable - third degree	Not Listed	Listed	Not Listed	Not Listed	Not Listed
Chloroform	0388	carcinogen	Listed	Listed	Present	Present	Present

CANADIAN REGULATIONS

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

Component	Canada - CEPA - Schedule I - List of Toxic Substances	Canada - NPRI	Canada - CEPA - 2010 Greenhouse Gases (GHG) Subject to Mandatory Reporting	CANADIAN CHEMICAL INVENTORY:	NDSL:
Ethyl alcohol 64-17-5 (0 - 1)	Present (065)	Part 5, Individual Substance Part 4 Substance	Not Listed	Listed	Not Listed
Chloroform 67-66-3 (0 - 99)	Present (065)	Part 1, Group 1 Substance Part 4 Substance	Not Listed	Listed	Not Listed

SECTION 16. OTHER INFORMATION

Prepared by: Occidental Chemical Corporation - HES&S Product Stewardship Department

Rev. Date: 29-Sep-2020

Reason for Revision:

- Scheduled review
- Updated Product Use information: SEE SECTION 1
- Updated Uses Advised Against information: SEE SECTION 1
- Emergency Overview was revised: SEE SECTION 2
- Revised Major Health Hazards: SEE SECTION 2
- Revised GHS Information: SEE SECTION 2

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- Modified GHS Hazard and Precautionary Statements: SEE SECTION 2
- FIRE FIGHTING MEASURES (SECTION 5)
- Revised Accidental Release Measures: SEE SECTION 6
- Revised Handling and Storage Recommendations: SEE SECTION 7
- Added Hygiene Measures SEE SECTION 8
- Updated Physical and Chemical Properties. SEE SECTION 9
- Toxicological Information has been revised: SEE SECTION 11
- Ecological Information has been modified: SEE SECTION 12
- Updated Disposal Considerations. SEE SECTION 13
- Updated Transportation Information: SEE SECTION 14
- Added LOLI tables such as EPA'S Clean Water / Air Act, TSCA status, DHS, PSM, EPCRA, CERCLA, Federal Canadian: SEE SECTION 15
- Revised California Proposition 65 Statement: SEE SECTION 15

IMPORTANT:

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OSHA Standard 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, safety data sheets, training and access to written records. We request that you, and it is your legal duty to, make all information in this Safety Data Sheet available to your employees.

End of Safety Data Sheet