MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Chloroform
Catalog Number: 1445853

Hach Company
P.O.Box 389
Loveland, CO USA 80539
(970) 669-3050

Emergency Telephone Numbers:
P.O.Box 389 (Medical and Transportation)
Loveland, CO USA 80539 (303) 623-5716 24 Hour Service
(970) 669-3050 (515) 232-2533 8am - 4pm CST

MSDS Number: M00190
Chemical Name: Methane, trichloro-
CAS No.: 67-66-3
Chemical Formula: CHCl₃
Chemical Family: Halogenated Hydrocarbons
Date of MSDS Preparation:
Day: 23
Month: June
Year: 2009

2. COMPOSITION / INFORMATION ON INGREDIENTS

Chloroform
CAS No.: 67-66-3
TSCA CAS Number: 67-66-3
Percent Range: 100.0
Percent Range Units: volume / volume
LD₅₀: Oral rat LD₅₀ = 695 mg/kg; Oral mouse LD₅₀ = 36 mg/kg.
LC₅₀: Inhalation rat LC₅₀ = 47,702 mg/m³/4hrs.
TLV: TWA = 10 ppm (49 mg/m³)
PEL: C: 50 ppm (C: 240 mg/m³)

3. HAZARDS IDENTIFICATION

Emergency Overview:
Appearance: Clear, colorless
Odor: Ether-like
HARMFUL IF SWALLOWED OR INHALED MAY CAUSE EYE AND RESPIRATORY TRACT IRRITATION
POSSIBLE CANCER HAZARD: MAY CAUSE CANCER BASED ON ANIMAL DATA MAY CAUSE KIDNEY OR LIVER DAMAGE BASED ON ANIMAL DATA

HMIS:
Health: 3  
Flammability: 0  
Reactivity: 0  
Protective Equipment: X - See protective equipment, Section 8.

NFPA:  
Health: 2  
Flammability: 0  
Reactivity: 0  
Symbol: Not applicable

Potential Health Effects:  
Eye Contact: May cause irritation  
Skin Contact: No effects are anticipated  
Skin Absorption: Harmful if absorbed through the skin. Causes central nervous system depression. Causes kidney damage. Causes liver damage.  
Target Organs: Central nervous system, Kidneys, Liver  
Ingestion: Causes: central nervous system depression, kidney damage, liver damage  
Target Organs: Central nervous system, Kidneys, Liver  
Inhalation: Causes: central nervous system depression, kidney damage, liver damage  
Target Organs: Central nervous system, Kidneys, Liver  
Medical Conditions Aggravated: Pre-existing: Central nervous system diseases, Kidney conditions, Liver conditions  
Chronic Effects: None reported

Cancer / Reproductive Toxicity Information:  
O.S.H.A. Listed: Yes  
Chloroform  
IARC Group 2B: Experimental Carcinogen  
Chloroform  
NTP Listed Group 2B: Experimental Carcinogen  
Chloroform  
Additional Cancer / Reproductive Toxicity Information: Contains: a recognized teratogen. an experimental mutagen.

Toxicologically Synergistic Products: Exposure to and/or consumption of alcohol may increase toxic effects of this product.

4. FIRST AID

Eye Contact: Immediately flush eyes with water for 15 minutes. Call physician.  
Skin Contact (First Aid): Wash skin with soap and plenty of water.  
Ingestion (First Aid): Do not induce vomiting. Call physician immediately.  
Inhalation: Remove to fresh air. Give artificial respiration if necessary. Call physician.

5. FIRE FIGHTING MEASURES

Flammable Properties: Material will not burn. During a fire, corrosive and toxic gases may be generated by thermal decomposition.  
Flash Point: Not applicable  
Method: Not applicable  
Flammability Limits:  
Lower Explosion Limits: Not applicable  
Upper Explosion Limits: Not applicable  
Autoignition Temperature: Not applicable  
Hazardous Combustion Products: This material will not burn.  
Fire / Explosion Hazards: May react violently with: alkali metals, aluminum / aluminum compounds, strong bases  
Static Discharge: None reported.
Mechanical Impact: None reported
Extinguishing Media: Carbon dioxide Alcohol foam. Dry chemical.
Fire Fighting Instruction: As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear. Evacuate area and fight fire from a safe distance. Water runoff can cause environmental damage. Dike and collect water used to fight fire.

6. ACCIDENTAL RELEASE MEASURES

Spill Response Notice: Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance.
Containment Technique: Releases of this material may contaminate the environment. Absorb spilled liquid with non-reactive sorbent material. Stop spilled material from being released to the environment. Dike the spill to contain material for later disposal.
Clean-up Technique: Cover with an inert material, such as sand. Sweep up material. Incinerate material at an E.P.A. approved hazardous waste facility. Decontaminate the area of the spill with a soap solution.
Evacuation Procedure: Evacuate general area (50 foot radius or as directed by your facility's emergency response plan) when: any quantity is spilled. Deny access to unnecessary and unprotected personnel. If conditions warrant, increase the size of the evacuation.
Special Instructions (for accidental release): Product is regulated as RCRA hazardous waste. Product is regulated as a hazardous water pollutant. Product is regulated as a hazardous air pollutant.
D.O.T. Emergency Response Guide Number: 151

7. HANDLING / STORAGE

Handling: Avoid contact with eyes skin clothing Do not breathe mist or vapors. Wash thoroughly after handling. Use with adequate ventilation. Maintain general industrial hygiene practices when using this product.
Storage: Protect from: light air Store in a cool, well-ventilated place. Keep away from: alkali metals alkalis
Flammability Class: Not applicable

8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

Engineering Controls: Have an eyewash station nearby. Have a safety shower nearby. Use a fume hood to avoid exposure to dust, mist or vapor. Maintain general industrial hygiene practices when using this product.
Personal Protective Equipment:
Eye Protection: chemical splash goggles
Skin Protection: lab coat pva (polyvinyl alcohol) gloves
Inhalation Protection: laboratory fume hood
Precautionary Measures: Avoid contact with: eyes skin clothing Do not breathe: mist/vapor Wash thoroughly after handling. Use with adequate ventilation. Keep away from: alkali metals alkalis
TLV: TWA = 10 ppm (49 mg/m³)
PEL: C: 50 ppm (C: 240 mg/m³)

9. PHYSICAL / CHEMICAL PROPERTIES

Appearance: Clear, colorless
Physical State: Liquid
Molecular Weight: 119.38 g/mol
Odor: Ether-like
pH: Not determined.
Vapor Pressure: 159 mm Hg @ 20°C (68°F).
Vapor Density (air = 1): 4.1 (at boiling point of chloroform).
Boiling Point: 61°C (142°F).
Melting Point: -64°C (-83.2°F).
Specific Gravity (water = 1): 1.49 @ 20°C (68°F).
Evaporation Rate (water = 1): Not determined. The evaporation rate where: (ether=1) = 0.6; (butyl acetate=1) = 11.6.
Volatile Organic Compounds Content: 100%.
Partition Coefficient (n-octanol / water): Not applicable
Solubility:
  Water: 1ml in 200ml water @ 25°C (77°F).
  Acid: Not determined.
  Other: Alcohol, Benzene, Ether, Carbon Tetrachloride, Carbon Disulfide.
Metal Corrosivity:
  Steel: Not determined.
  Aluminum: Not determined.

10. STABILITY / REACTIVITY

Chemical Stability: Stable when stored under proper conditions.
Conditions to Avoid: Exposure to air. Exposure to light. Extreme temperatures Heating to decomposition.
Reactivity / Incompatibility: Incompatible with: alkali metals alkalies aluminum caustics coatings (such as paint, varnish, wax, lacquer, etc.) plastics rubber
Hazardous Decomposition: Heating to decomposition releases toxic and/or corrosive fumes of: phosgene chlorides carbon monoxide
Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Product Toxicological Data:
  LD50: Oral rat LD50 = 695 mg/kg; Oral mouse LD50 = 36 mg/kg.
  LC50: Inhalation rat LC50 = 47,702 mg/m³/4hrs.
Dermal Toxicity Data: Skin rabbit LD50 = >20g/kg.
Skin and Eye Irritation Data: Skin rabbit (Standard Draize test) 500 mg/24hrs = MILD; Skin rabbit (Open Draize test) 10 mg/24hrs = MILD; Eye rabbit (Standard Draize test) 20 mg/24hrs = MODERATE.
Mutation Data: Sister chromatid exchange in human lymphocytes @ 10 mmol/l; Cytogenetic analysis of rat @ 597 mg/kg/5D (intermittent oral administration); DNA damage in mammalian lymphocytes @ 1 mmol/l; More data reported in RTECS.
Reproductive Effects Data: Oral rat TDLo (female) = 1260 mg/kg (Fetotoxicity; Musculoskeletal abnormalities); Inhalation rat TCLo (female) = 30 ppm/7H (Fertility effects; Fetotoxicity; Musculoskeletal abnormalities);
Ingredient Toxicological Data: --
Not applicable

12. ECOLOGICAL INFORMATION

Product Ecological Information: --
No ecological data available for this product.
Ingredient Ecological Information: --
Not applicable

13. DISPOSAL CONSIDERATIONS

EPA Waste ID Number: U044
Special Instructions (Disposal): Dispose of material in an E.P.A. approved hazardous waste facility.

Empty Containers: Rinse three times with an appropriate solvent. Dispose of empty container as normal trash.

NOTICE (Disposal): These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information.

14. TRANSPORT INFORMATION

D.O.T.:  
D.O.T. Proper Shipping Name: Chloroform

DOT Hazard Class: 6.1
DOT Subsidiary Risk: NA
DOT ID Number: UN1888
DOT Packing Group: III

I.C.A.O.:  
I.C.A.O. Proper Shipping Name: Chloroform

ICAO Hazard Class: 6.1
ICAO Subsidiary Risk: NA
ICAO ID Number: UN1888
ICAO Packing Group: III

I.M.O.:  
I.M.O. Proper Shipping Name: Chloroform

I.M.O. Hazard Class: 6.1
I.M.O. Subsidiary Risk: NA
I.M.O. ID Number: UN1888
I.M.O. Packing Group: III

Additional Information: There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

U.S. Federal Regulations:

O.S.H.A.: This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

E.P.A.:  
S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370): Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard
S.A.R.A. Title III Section 313 (40 CFR 372): This product contains a chemical(s) subject to the reporting requirements of Section 313 of Title III of SARA.
Chloroform
302 (EHS) TPQ (40 CFR 355): Chloroform 10,000 lbs.
304 CERCLA RQ (40 CFR 302.4): Chloroform 10 lbs.
RCRA: Contains RCRA regulated substances. See Section 13, EPA Waste ID Number.

C.P.S.C.: Not applicable

State Regulations:  
California Prop. 65: WARNING - This product contains a chemical known to the State of California to cause cancer.
Identification of Prop. 65 Ingredient(s): Chloroform

California Perchlorate Rule CCR Title 22 Chap 33:

Trade Secret Registry: Not applicable
National Inventories:
U.S. Inventory Status: TSCA Listed: Yes
TSCA CAS Number: 67-66-3

16. OTHER INFORMATION

Intended Use: Laboratory Reagent


Revision Summary: Updates in Section(s) 14,

Legend:

NA - Not Applicable w/w - weight/weight
ND - Not Determined w/v - weight/volume
NV - Not Available v/v - volume/volume

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

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