Material Safety Data Sheet

Chloroform MSDS

Section 1: Chemical Product and Company Identification
Product Name: Chloroform
Catalog Codes: SLC1888, SLC5044
CAS#: 67-66-3
RTECS: FS9100000
TSCA: TSCA 8(b) inventory: Chloroform
Cl#: Not available.
Synonym: Trichloromethane; Methane, trichlor-
Chemical Name: Chloroform
Chemical Formula: CHCl3

Contact Information:
Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396
US Sales: 1-800-901-7247
International Sales: 1-281-441-4400
Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300
International CHEMTREC, call: 1-703-527-3887
For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients
Composition:
Name CAS # % by Weight
Chloroform 67-66-3 100

Toxicological Data on Ingredients: Chloroform: ORAL (LD50): Acute: 695 mg/kg [Rat]. 36 mg/kg [Mouse]. 820 mg/kg [Guinea pig]. DERMAL (LD50): Acute: >20000 mg/kg [Rabbit]. VAPOR (LC50): Acute: 47702 mg/m 4 hours [Rat].

Section 3: Hazards Identification
Potential Acute Health Effects: Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.
Slightly hazardous in case of skin contact (permeator).
Potential Chronic Health Effects: CARCINOGENIC EFFECTS: Classified + (Proven.) by NIOSH. Classified A3 (Proven for animal.) by ACGIH, 2B (Possible for human.) by IARC. Classified 2 (Some evidence.) by NTP. MUTAGENIC EFFECTS:
Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to kidneys, liver, heart. Repeated or prolonged exposure to the substance can produce target organs damage.

**Section 4: First Aid Measures**

**Eye Contact:** Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. WARM water MUST be used. Get medical attention.

**Skin Contact:** In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient.
Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

**Serious Skin Contact:** Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

**Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Serious Inhalation:** Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt, or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation.

**WARNING:** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek medical attention.

**Ingestion:** Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

**Serious Ingestion:** Not available.

**Section 5: Fire and Explosion Data**

**Flammability of the Product:** Non-flammable.

**Auto-Ignition Temperature:** Not applicable.

**Flash Points:** Not applicable.

**Flammable Limits:** Not applicable.

**Products of Combustion:** Not available.

**Fire Hazards in Presence of Various Substances:** Not available.

**Explosion Hazards in Presence of Various Substances:** Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

**Fire Fighting Media and Instructions:** Not applicable.

**Special Remarks on Fire Hazards:** Not available.

**Special Remarks on Explosion Hazards:** May explode if it comes in contact with aluminum powder, lithium, perchlorate, pentoxide, bis(dimethylamino)dimethylstannane, potassium, potassium-sodium alloy, sodium (or sodium hydroxide or sodium methoxide), and methanol.

**Section 6: Accidental Release Measures**

**Small Spill:** Absorb with an inert material and put the spilled material in an appropriate waste disposal.
Large Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage
Precautions: Do not ingest. Do not breathe gas/fumes/vapor/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as metals, alkalis.

Section 8: Exposure Controls/Personal Protection
Engineering Controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the workstation location.
Personal Protection: Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
Personal Protection in Case of a Large Spill: Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits: TWA: 10 (ppm) [Australia] Inhalation TWA: 2 (ppm) from OSHA (PEL) [United States] Inhalation STEL: 9.78 (mg/m3) from NIOSH Inhalation STEL: 2 (ppm) from NIOSH Inhalation TWA: 9.78 (mg/m3) from OSHA (PEL) [United States]
Inhalation TWA: 10 (ppm) from ACGIH (TLV) [United States] [1999] Inhalation TWA: 2 (ppm) [United Kingdom (UK)] Inhalation TWA: 9.9 (mg/m3) [United Kingdom (UK)] Inhalation Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties
Physical state and appearance: Liquid.
Taste: Burning. Sweet.
Molecular Weight: 119.38 g/mole
Color: Colorless. Clear
pH (1% soln/water): Not available.
Boiling Point: 61° C (141.8° F)
Melting Point: -63.5° C (-82.3° F)
Critical Temperature: 263.33° C (506° F)
Specific Gravity: 1.484 (Water = 1)
Vapor Pressure: 21.1 kPa (@ 20°C)
Vapor Density: 4.36 (Air = 1)
Volatility: Not available.
Odor Threshold: 85 ppm
Water/Oil Dist. Coeff.: The product is more soluble in oil; log(oil/water) = 2
Ionicity (in Water): Not available.
Dispersion Properties: Not available.
Solubility: Very slightly soluble in cold water.
Section 10: Stability and Reactivity Data
Stability: The product is stable.
Instability Temperature: Not available.
Conditions of Instability: Incompatible materials, Light
Incompatibility with various substances: Reactive with metals, alkalis.
Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Light Sensitive. Incompatible with triisopropyl phosphine, acetone, disilane, fluorine, strong bases and reactive metals (aluminum, magnesium in powdered form), light.
Special Remarks on Corrosivity: It will attack some forms of plastics, rubber, and coatings.
Polymerization: Will not occur.

Section 11: Toxicological Information
Routes of Entry: Absorbed through skin. Eye contact. Inhalation.
Toxicity to Animals: WARNING: THE LC50 VALUES HERUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 36 mg/kg [Mouse]. Acute dermal toxicity (LD50): >20000 mg/kg [Rabbit]. Acute toxicity of the vapor (LC50): 47702 mg/m 4 hours [Rat]. 3

Chronic Effects on Humans: CARCINOGENIC EFFECTS: Classified + (Proven.) by NIOSH. Classified A3 (Proven for animal.) by ACGIH. 2B (Possible for human.) by IARC. Classified 2 (Some evidence.) by NTP. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. May cause damage to the following organs: kidneys, liver, heart.

Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

Special Remarks on Toxicity to Animals: Not available.
Special Remarks on Chronic Effects on Humans: May affect genetic material (possible mutagen) and cause adverse reproductive effects (embryotoxicity and fetotoxicity) Suspected carcinogen (tumorogenic) and teratogen based on animal data. Human: passes the placental barrier, detected in maternal milk.

Special Remarks on other Toxic Effects on Humans: Acute Potential Health Effects: Skin: Causes skin irritation and may cause chemical burns. Eye: Causes eye irritation, burning pain and reversible injury to corneal epithelium. Inhalation: Causes irritation of the respiratory system (mucous membranes). May affect behavior/Nervous system (CNS depressant, fatigue, dizziness, nervousness, giddiness, euphoria, loss of coordination and judgement, weakness, hallucinations, muscle contraction/spasticity, general anesthetic, spastic paralysis, headache), anorexia (neurological and gastrointestinal symptoms resembling chronic alcoholism), and possibly coma and death. May affect the liver, kidneys and gastrointestinal tract (nausea, vomiting). Ingestion: Causes gastrointestinal tract irritation (nausea, vomiting). May affect the liver, urinary system (kidneys), respiration, behavior/nervous system (symptoms similar to inhalation), and heart. Chronic Potential Health Effects: Inhalation: Prolonged or repeated inhalation may affect the liver (hepatitis, jaundice, hepatocellular necrosis), metabolism (weight loss), respiration (fibrosis, pneumoconiosis), behavior/central nervous system (symptoms similar to acute inhalation), blood,
musculoskeletal system, and kidneys. Ingestion: Prolonged or repeated ingestion may affect the liver, kidneys, metabolism (weight loss), endocrine system (spleen), blood (changes in cell count).

Section 12: Ecological Information
Ecotoxicity: Ecotoxicity in water (LC50): 43.8 mg/l 96 hours [Trout].
BOD5 and COD: Not available.
Products of Biodegradation: Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation: The products of degradation are as toxic as the product itself.
Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations
Waste Disposal: Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information
DOT Classification: CLASS 6.1: Poisonous material.
Identification: Chloroform UNNA: UN1888 PG: III
Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information
Federal and State Regulations: California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Chloroform California prop. 65 (no significant risk level): Chloroform: 0.02 mg/day (value)
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Chloroform New York release reporting list: Chloroform Rhode Island RTK hazardous substances:
Chloroform SARA 313 toxic chemical notification and release reporting: Chloroform CERCLA: Hazardous substances:
Chloroform: 10 lbs. (4.536 kg)
Other Classifications:
WHMIS (Canada): CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). CLASS D-2A: Material causing other toxic effects (VERY TOXIC).
HMIS (U.S.A.):
Health Hazard: 2
Fire Hazard: 0
Reactivity: 0
Personal Protection: h
National Fire Protection Association (U.S.A.):  
Health: 2  
Flammability: 0  
Reactivity: 0  
Specific hazard:  
Protective Equipment: Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information  
References: Not available.  
Other Special Considerations: Not available.

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall ScienceLab.com be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if ScienceLab.com has been advised of the possibility of such damages.

Approved by: Paul DiMarco, Vice President Quality Management  
FOR INDUSTRIAL OR LAB USE ONLY. Not intended as an active substance in Food or Drug. Not to be considered a Medical Device. Not intended for use as a Disinfectant as defined by the EPA. The expiration date of this product is three years from the date of manufacture. (Rev. # Disclaimer only: Rev 2.0 11/19/01 PJM)  
This document has been electronically generated and is therefore not signed. A signed copy can be obtained from Pharmco’s Quality Control office.

58 Vale Road, Brookfield, CT 06804, USA  
Telephone: (203) 740-3471 Fax (203) 740-3481  
E-Mail: paul@pharmco-prod.com  
Web Site: www.pharmco-prod.com

PRODUCT SPECIFICATION SHEET  
CHLOROFORM  
REAGENT GRADE ACS  
GENERAL USE HPLC  
Catalog No: 30900HPLC, 309000ACS  
Available in 4x4 liter Amber Glass  
Product Specifications Limits Typical Lot Analysis  
Assay, (GC) min.,  
(Including Stabilizer) 99.8% 99.9%  
Color (APHA), max. 10 <5  
Residue After Evaporation, max. 10ppm <10  
Acetone & Aldehyde, max. 0.005% <0.005%  
Acid and Chloride, max. To Pass Pass  
Free Chlorine (Cl), max. To Pass Pass
Lead (Pb), max. 0.05ppm <0.05ppm
Substances Darkened by H₂SO₄ To Pass Pass
Suitability for use in Dithizone Tests
To Pass Pass
Stabilizer 0.5-1.0% 0.75%
UV Absorbance @ A.U. A.U.
245nm 1.00 max. 0.740
255 nm 0.25 max. 0.148
260 nm 0.15 max. 0.097
270 nm 0.05 max. 0.045
290-400 nm 0.01 max. <0.01
LC Suitability To Pass Pass
Water 0.03% <0.001%
Form Chloroform-HPLC, # 401, Rev. 2.0, 08/01
Approved by: Paul DiMarco, Vice President Quality Management
FOR INDUSTRIAL OR LAB USE ONLY. Not intended as an active substance in Food or Drug. Not to be considered a Medical Device. Not intended for use as a Disinfectant as defined by the EPA. The expiration date of this product is three years from the date of manufacture. (Rev. # Disclaimer only: Rev 2.0 11/19/01 PJM)
This document has been electronically generated and is therefore not signed. A signed copy can be obtained from Pharmco’s Quality Control office.
58 Vale Road, Brookfield, CT 06804, USA
Telephone: (203) 740-3471 Fax (203) 740-3481
E-Mail: paul@pharmco-prod.com
Web Site: www.pharmco-prod.com
This product is manufactured for Routine HPLC Analysis and meets the requirements for General Use HPLC Grade, ACS Specifications. This product is not intended for GC or critical HPLC analysis. See Glass Purified Glass Distilled Grade for those applications.