

MATERIAL SAFETY DATA SHEET

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CHLOROFORM
 Revision C

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SECTION I. MATERIAL IDENTIFICATION

MATERIAL NAME: CHLOROFORM
 OTHER DESIGNATIONS: Trichloromethane, CHCl₃, COBEHN Spray-Clean Solvent (Trade name),
 CAS# 000 067 663
 MANUFACTURER: Available from many suppliers, including Cobehn, Inc., 226 Passaic,
 Fairfield, NJ 07006

SECTION II. INGREDIENTS AND HAZARDS

	%	HAZARD DATA
Chloroform plus stabilizer*	ca 100	8-hr TWA 10 ppm** or 50 mg/m ³
*0.5-1% ethyl alcohol or 0.025% amylene. **ACGIH (1979); labeled as a suspected carcinogen. NIOSH (1976) recommended a 2 ppm ceiling level and a suspected carcinogen classification when a high level of CHCl ₃ by gavage was found to cause liver cancer in mice and kidney tumors in rats. NIOSH also warned of an increased toxic hazard with CHCl ₃ when alcohol had been consumed. Current OSHA TLV remains at a 50 ppm ceiling limit.		
		Human, oral LDLo 140 mg/kg
		Rat, inhalation LCLo 8000 ppm/4 hr
		Rat (6-15 day preg) inhalation TCLO 100 ppm/7 hr (teratogenic)

SECTION III. PHYSICAL DATA

Boiling point, 1 atm, deg F (C) -- 142 (61)	Specific gravity, 20/4 C -----	1.489
Vapor pressure at 20 C, mm Hg --- 159	Volatiles, % -----	ca 100
30 C, mm Hg --- 245	Evaporation rate (CCl ₄ =1) -----	1.18
Vapor density (Air=1) ----- 4.13	Freezing point, deg F (C) -----	-82(-63.5)
Solubility in water at 25 C, % -- 0.8	Molecular weight -----	119.38
Appearance & Odor: Clear, colorless, volatile liquid with a characteristic "sweetish" ethereal odor.		

SECTION IV. FIRE AND EXPLOSION DATA

			LOWER	UPPER
Flash Point and Method	Autoignition Temp.	Flammability Limits In Air		
None	--	None	--	--

Nonflammable material. Use extinguishing media appropriate for surrounding fire. When this material is involved in a fire situation, firefighters should use self-contained breathing apparatus for protection against suffocating vapors and toxic and corrosive decomposition products.

SECTION V. REACTIVITY DATA

Chloroform is stable in a sealed container in the dark. Even when stabilized with ethanol, it develops acidity from prolonged exposure to air and light. Thermal-oxidative decomposition at high temperature can generate toxic and corrosive oxides of chlorine and carbon, hydrogen chloride, and chlorine. Avoid contact with strong alkalis.

SECTION VI. HEALTH HAZARD INFORMATION	TLV 10 ppm or 50 mg/m ³
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Excessive inhalation can cause headache, fatigue, dizziness, mental dullness, nausea & unconsciousness. At high concentrations it can cause death from heart arrhythmias and from kidney and liver disorders. Eye contact with liquid or high vapor concentrations can cause pain and irritation, but serious damage is not expected. Skin contact will cause defatting and possible irritation from prolonged contact. Ingestion will cause severe burning of the mouth and throat. Liver damage and loss of consciousness may result from a large ingestion (4 oz.). It is a suspected carcinogen for man.

FIRST AID:

- Skin Contact: Wash with soap and water; replace skin oils with creams or lotions.
- Eye Contact: Wash eyes well with plenty of water for 15 minutes. Get medical help.
- Inhalation: Move patient to fresh air. Restore or support breathing as necessary. Obtain medical attention for serious exposure.
- Ingestion: Give 3 glasses milk or water and induce vomiting if conscious. Repeat if large quantities were ingested. Get medical attention!

SECTION VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

Notify safety personnel and provide adequate ventilation. Workers involved in clean-up must use protection against skin contact and self-contained breathing apparatus. Cover spill with an inert solid absorbent; scoop up into metal container with a cover to prevent evaporation. The absorbed material may be spread on a level site outdoors (away from buildings and people) to evaporate. Smaller spills may be evaporated in a fume hood.

DISPOSAL: Scrap liquid can be disposed of via a licensed waste disposal company or it can be redistilled, or it can be mixed with a more flammable liquid and burned in an approved incinerator with afterburner and scrubber. Follow Federal, State and local regulations.

SECTION VIII. SPECIAL PROTECTION INFORMATION

Provide general and exhaust ventilation to meet TLV requirements. Maintain hood velocities >100 lfm in areas of chloroform use. Design hoods to catch the heavy vapors. (Exhausts for enclosed areas or below ground should be installed at the lowest point.) Test the atmosphere of enclosed area before entering to ensure safe working conditions. Gloves and aprons (Buna, PVA, or neoprene) should be used to prevent skin contact. Safety showers and eyewash stations should be available. Use of air-supplied or self-contained respirators only is recommended by NIOSH for concentrations above the TLV.

SECTION IX. SPECIAL PRECAUTIONS AND COMMENTS

Store in sealed containers below 86 F (30 C) away from light. Protect containers from damage. Use with adequate ventilation. Do not use near open flames or sparks as toxic and corrosive decomposition products may form. Do not use rubber or plastic hose or pipe for transfer. Prevent skin and eye contact. Avoid inhalation of vapors. Simultaneous exposure to chloroform and alcohol can increase the toxic hazards of chloroform. Use chloroform with respect and caution, since it is a suspected carcinogen. Provide preplacement & periodic medical exams for those working with chloroform, including kidney & liver functions, nervous system, skin, & any history of alcoholism.

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