Material Safety Data Sheet

Lawson Screen & Digital Products
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Phone: 314-382-9300
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Prepared: 6/16/05
Updated:

Product Name: Methylene Chloride

1. Product and Company Description

Lawson Screen & Digital Products
5110 Penrose St.
St. Louis, Mo 63115

For Product Information/Emergency Contact:
Chemtrec (800) 262-8200

Chemical Name or Synonym:
Methane dichloride; Methylene bichloride; Methylene dichloride; Dichloromethane; DCM

2. Chemical Composition

Component	CAS #	%Composition
Methylene Chloride	75-09-2	100

3. Hazards Identification

A. Emergency Overview:

Information Pertaining To Particular Dangers For Man And Environment:
Methylene chloride is metabolically converted to carbon monoxide after systemic absorption, which yields increased concentrations of carboxyhemoglobin in the blood. Harmful if swallowed. Causes eye, skin, and respiratory tract irritation. May be harmful if inhaled. May cause central nervous system effects. Potential cancer hazard. May cause kidney damage. This substance has caused adverse reproductive and fetal effects in animals.

Physical Appearance:
Clear colorless, liquid

B. Potential Health Effects:

Acute Eye:
Contact with eyes may cause severe irritation, and possible eye burns.

Acute Skin:
May be absorbed through the skin. Causes irritation with burning pain, itching, and redness. Prolonged exposure may result in skin burns.

Acute Inhalation:
Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Causes respiratory tract irritation. May cause narcotic effects in high concentration. Vapors may cause dizziness or suffocation. May cause blood changes. Overexposure may cause an increase in carboxyhemoglobin levels in the blood. Can produce delayed pulmonary edema. Because of its high volatility, airborne concentrations of methylene chloride can accumulate in poorly ventilated areas. Odor is a poor indicator of possibly dangerous air concentrations of methylene chloride.

Acute ingestion:
Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May cause kidney damage. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. May cause carboxyhemoglobinemia.

Chronic Effects:
Possible cancer hazard based on tests with laboratory animals. Prolonged or repeated skin contact may cause dermatitis. May cause reproductive and fetal effects. Laboratory experiments have resulted in mutagenic effects. Chronic exposure may cause lung, liver, and pancreatic tumors. May cause conjunctivitis and/or corneal burns.

Medical Conditions Generally Aggravated by Exposure:
No known conditions are aggravated by this material.

4. First Aid Measures

First Aid Measures for Accidental:

Eye Exposure:
Check for and remove contact lenses. If irritation or redness develops, flush eyes with cool, clean, low-pressure water for at least 15 minutes. Hold eyelids apart to ensure complete irrigation of the eye and eyelid tissue. Do not use eye ointment. Seek medical attention immediately.

Skin Exposure:
Remove contaminated shoes and clothing. Flush affected area with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. Do not use ointments. If skin surface is not damaged, clean affected area thoroughly with mild soap and water. Seek medical attention if tissue appears damaged or if pain or irritation persists.

Inhalation:
Immediately move victim to fresh air. If victim is not breathing, immediately begin rescue breathing. If heart has stopped, immediately begin cardiopulmonary resuscitation (CPR). Seek medical attention immediately.

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Ingestion:
Do not induce vomiting. If spontaneous vomiting is about to occur, place victim's head below knees. If victim is drowsy or unconscious, place on the left side with head down. Never give anything by mouth to a person who is not fully conscious. Do not leave victim unattended. Seek medical attention immediately.

5. Fire Fighting Measures

Fire Hazard Data:

Ignition Temperature: 556°C (1032.8°F)

Flash Point: NA

Flammability Limits (vol/vol%):	**Lower:**	**Upper:**
	13	23

Extinguishing Media:
Use dry chemical, CO2, water spray.

Special Fire Fighting Procedures:
Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies. Use water spray to keep fire-exposed containers cool. No flash point in conventional closed tester, but forms flammable vapor-air mixtures in larger volumes and may be an explosion hazard in a confined space.

Unusual Fire and Explosion Hazards:
None

6. Accidental Release Measures

Cleanup and Disposal of Spill:
Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Provide ventilation. All recovered material should be packaged, labeled, transported and disposed of or reclaimed in conformance with applicable laws and regulations and in conformance with good engineering practices. Reclaim where possible.

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7. Handling and Storage

Handling:
Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Keep away from heat, sparks and flame. Use only with adequate ventilation. Avoid breathing vapor or mist.

Storage:
Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Store below 40°C. Keep away from active metals.

8. Exposure Controls / Personal Protection

Exposure Guidelines:

Component	ACGIH	NIOSH	OSHA-PELs
Methylene Chloride	50 ppm TWA	2300 ppm IDLH	25 ppm TWA (8 hr); 125 ppm STEL (15 min); 12.5 ppm Action Level (See 29 CFR 1910 .1052)

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor or mists below the applicable workplace exposure limits indicated. All electrical equipment should comply with the National Electric Code. An emergency eye wash station and safety shower should be located near the work-station.

Respiratory Protection:
A respiratory protection program that meets OSHA's 29 CFR 1910.134 or ANSI Z88.2 requirements must be followed whenever workplace conditions warrant respirator use. If exposure can exceed the occupational exposure limit(s), use approved respiratory protection equipment.

Eye / Face Protection:
Use splash goggles when eye contact due to splashing or spraying liquid is possible.

Skin Protection:
Wear chemical resistant gloves such as: Neoprene. Depending on the conditions of use, protective gloves, apron, boots, head and face protection should be worn.

9. Physical and Chemical Properties

Physical Appearance: Clear colorless liquid

Odor: Ethereal odor - chloroform-like

pH: ND

Specific Gravity: 1.33

Water Solubility: Slightly soluble

Melting/Freezing Point: ~ -97°C

Boiling Point: 40°C

Vapor Pressure: 350 mm Hg @ 20 °C

Vapor Density: 2.93

Percent Volatiles by Volume: ND

Viscosity: ND

10. Stability and Reactivity

Chemical Stability:
Stable at room temperature in closed containers under normal storage and handling conditions. May form explosive mixtures in atmospheres having high oxygen content.

Conditions to Avoid:
Excess heat, attacks some plastics, rubber, and coatings, confined spaces, When no water is present, dichloromethane is not corrosive to metals. At high temperatures and in the presence of water (causing slow decomposition forming HCl), corrosion of iron, some stainless steels, copper and aluminum can occur.

Materials / Chemicals to Be Avoided:
Strong oxidizing agents, strong bases, chemically active metals.

Hazardous Decomposition Products:
Hydrogen chloride, phosgene, carbon monoxide, carbon dioxide.

Hazardous Polymerization:
Will not occur.

11. Toxicological Information

RTECS#:
CAS# 75-09-2: PA8050000
LD50/LC50:

CAS# 75-09-2:
Draize test, rabbit, eye: 162 mg Moderate;
Draize test, rabbit, eye: 10 mg Mild;
Draize test, rabbit, eye: 500 mg/24H Mild;
Draize test, rabbit, skin: 810 mg/24H Severe;
Draize test, rabbit, skin: 100 mg/24H Moderate;
Inhalation, mouse: LC50 = 14400 ppm/7H;
Inhalation, mouse: LC50 = 49100 mg/m3/6H;
Inhalation, mouse: LC50 = 54000 mg/m3/2H;
Inhalation, mouse: LC50 = 56220 mg/m3/7H;
Inhalation, rat: LC50 = 52 gm/m3;
Inhalation, rat: LC50 = 76000 mg/m3/4H;
Inhalation, rat: LC50 =

Carcinogenicity:
CAS# 75-09-2:

- **ACGIH:** A3 - Confirmed animal carcinogen with unknown relevance to humans
- **California:** carcinogen, initial date 4/1/88
- **NTP:** Suspect carcinogen
- **IARC:** Group 2B carcinogen

Epidemiology: There are few reports of injury despite widespread use of dichloromethane (ACGIH, 1991). Solvent abuse has led to death (Harbison, 1998).
Teratogenicity: Inhalation, rat: TCLo = 4500 ppm/24H (female 1-17 day(s) after conception) Effects on Newborn - behavioral.; Inhalation, rat: TCLo = 1250 ppm/7H (female 6-15 day(s) after conception) Specific Developmental Abnormalities - musculoskeletal system and urogenital system.
Reproductive Effects: Adverse reproductive effects have occurred in experimental animals.
Mutagenicity: DNA inhibition: Human, Fibroblast = 5000 ppm/1H (Continuous).; Morphological transformation: Rat, Embryo = 160 umol/L.; DNA damage: Oral, rat = 1275 mg/kg.; Inhalation, mouse: TCLo = 2000 ppm/5H/2Y-C (Tumorigenic - Carcinogenic by RTECS criteria--Lungs, Thorax, or Respiration - Tumors).
Neurotoxicity: The neurotoxicity is thought to be due to a direct nonspecific CNS depressant action of dichloromethane and to indirect effects of carbon monoxide. Dichloromethane may exert acute effects on the nervous system by mechanisms related to its lipophilicity.

12. Ecological Information

Ecotoxicological Information:
Fish: Bluegill/Sunfish: 230mg/L; 24H; StaticFish: Fathead Minnow: 196mg/L; 96H; This chemical has a moderate potential to affect some aquatic organisms. It is resistant to biodegradation, and has a low potential to persist in the aquatic environment. 96-hr. EC50 (loss of equilibrium); Fathead minnow: 99mg/L; 96-hr. EC10: 66.3 mg/L. Bluegill sunfish: 96-hr. LC50=220 mg/L; Water flea: 24-hr. LC50=2270

mg/L; No observed effect level:1550 mg/L.
Environmental: Terrestrial: Expected to evaporate from near surface soil into the atmosphere; expected to leach. Aquatic: Primarily lost by evaporation to the atmosphere which should take several hours depending on wind and mixing conditions. Atmospheric: Will degrade by reaction with hydroxyl radicals with a half life of several months. . Dichloromethane is reported to completely biodegrade under aerobic conditions with sewage seed or activated sludge between 6 hours to 7 days. Not expected to bioconcentrate due to its low octanol/water coefficient.

13. Disposal Considerations

Waste Disposal Method:
Contaminated product, soil, or water may be hazardous waste. Comply with applicable local, state or international regulations concerning solid or hazardous waste disposal and/or container disposal.

14. Transportation Information

Shipping Name:

ADR/RID/IMO/ICAO/US DOT	**Proper Shipping Name**	DICHLOROMETHANE
	Hazard Class	6.1
	ID Number	UN1593
	Packaging Group	III

15. Regulatory Information

U.S. Federal Regulations:

SARA Title III Hazard Classes:
Fire Hazard: No
Reactive Hazard: No
Release of Pressure: No
Acute Health Hazard: Yes
Chronic Health Hazard: Yes

TSCA
All components of this product are on the TSCA inventory or are not required to be listed.

Other Regulations:

U.S. State
The components identified with an X are present on the respective state's Right To Know lists:

Component	MA	PA	MN	NJ	CA	MI
Methylene Chloride	X	X	X	X	X	

Proposition 65
WARNING: This product contains Methylene chloride, a chemical known to the state of California to cause cancer.
California No Significant Risk Level: CAS# 75-09-2: 200 æg/day NSRL (inhalation); 50 æg/day NSRL (except inhalation)

16. Other Information

National Fire Protection Association Hazard Ratings – NFPA(R):

Health Hazard: 2
Flammability: 1
Reactivity: 0

Key Legend Information:
N/A – Not Applicable
ND – Not Determined
ACGIH – American Conference of Governmental Industrial Hygienists
OSHA – Occupational Safety and Health Administration
TLV – Threshold Limit Value
PEL – Permissible Exposure Limit
TWA – Time Weighted Average
STEL – Short Term Exposure Limit
NTP – National Toxicology Program
IARC – International Agency for Research on Cancer

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