

# Material Safety Data Sheet: RMT3001

CHEMTRAC EMERGENCY #: 1-800-424-9300 1-703-527-3887

## I. PRODUCT IDENTIFICATION

Chemical Name: Dichloromethane Molecular Weight: 84.94  
Trade Name: Methylene Chloride, Technical Grade and Decaffeination Grade  
Synonyms: Methylene Chloride DOT Identification No.: UN1593

Hazard Ratings		
HMIS	NFPA	
Health	2*	2
Fire	1	1
Reactivity	0	0
* = Chronic		

## II. PRODUCT AND COMPONENT DATA

Component(s) Chemical Name: Dichloromethane\* CSA Registry No.: 75-09-2  
% (wt.) Approx.: 100 OSHA PEL: 500 ppm  
\*Chemical subject to reporting requirements of section 313 of Title III of the 1986 Superfund Amendments and Reauthorization Act (SARA and 40 CFR Part 372).

RhinoTech recommends that its customers minimize employee exposure. We therefore suggest that its customers consider adopting the lower of the current OSHA PEL or the ACGIH TLVs for the purpose of evaluating employee exposures. The TLVs recommended by the ACGIH have been updated on a continuing basis. See Section VI.

## III. PHYSICAL DATA

Appearance and Odor: Clear, colorless liquid; mildly sweet odor. Specific Gravity: 1.32 @ 25/25°C  
Boiling Point: 40.1°C(104°F) Vapor Density in Air (Air=1) 2.9  
Vapor Pressure: 350 mmHg @ 20°C % Volatile by Vol.: 100  
Evaporation Rate (ether=1): 0.7 Solubility in Water: 1.32gm/100 gm @ 25°C

## IV. REACTIVITY DATA

Stability: Stable  
Condition to Avoid: Contact with open flames, electric arcs, or other hot surfaces which can cause thermal decomposition.  
Incompatibility (Materials to avoid): Strong alkalis, oxygen, nitrogen peroxide, sodium, potassium, and other oxidizers and reactive metals.  
Hazardous Decomposition Products: Hydrogen chloride, phosgene, chlorine  
Hazardous Polymerization: Will not occur.

## V. FIRE AND EXPLOSION HAZARD DATA

Flashpoint: None (TCC) Flammable Limits in Air: 12-19% (Vol.) @ 100°C  
Extinguishing Agents: Water Fog, Dry Chemical, Foam, Carbon Dioxide  
NFPA Hazard Rating: Health 2 Flammability 1 Reactivity 0  
Unusual Fire and Explosion Hazards: Concentrated vapors can be ignited by high intensity ignition source. Firefighters should wear self-contained positive pressure breathing apparatus due to thermal decomposition products and avoid skin contact.

## VI. TOXICITY AND FIRST AID

Exposure Limits (when exposure to this product and other chemicals is concurrent, the exposure limit must be defined in the workplace:  
ACGIH: 50ppm TWA (8 hr) OSHA: 500 ppm TWA (8hr) 1000 ppm ceiling (for peak value  
concentration refer to 29 CFR 1910.1000 Table 2-2)  
(Odor threshold approximately 200-300 ppm; causes olfactory fatigue) Consumption of alcoholic beverages may increase the potential development of toxic effects resulting from exposure to this product.

Medical Conditions Aggravated by Exposure: Alcoholism, acute and chronic liver and kidney disease, chronic lung disease, anemia, coronary disease or rhythm disorders of the heart.

**ACUTE TOXICITY** Primary route(s) of exposure: Inhalation

Inhalation: Major route of potential exposure. Methylene chloride depresses the central nervous system. Concentrations between 900-1000 ppm may cause dizziness. Nausea headache and vomiting can occur at concentrations above 2000 ppm. At 7000 ppm numbness and tingling in arms and legs and rapid heartbeat have occurred. Loss of consciousness and death have occurred at levels above 9000 ppm, if exposure is prolonged.

Carboxyhemoglobin levels can be elevated in persons exposed to methylene chloride and can cause a substantial stress on the cardiovascular system. This elevation can be additive to the increase caused by smoking and other carbon monoxide sources.

**ACUTE TOXICITY con't:**

Skin: Liquid methylene chloride is painful and irritating if confined to skin by gloves, clothing and etc. Prolonged or repeated contact may cause irritation, defatting of skin, and dermatitis. Absorption of liquid through intact skin is possible if contact with liquid is prolonged.

Eyes: Liquid may cause temporary irritation with temporary correal injury. Vapors may irritate eyes.

Ingestion: Single dose toxicity low to moderate. If vomiting occurs, methylene chloride can be aspirated into lungs, which can cause chemical pneumonia and systemic effects.

#### **FIRST AID**

Inhalation: Remove to fresh air. If breathing has stopped, administer artificial respiration. Call a physician.

Skin: Remove contaminated clothing and shoes. Wash exposed area thoroughly with large quantities of water, for at least 15 min. Wash contaminated clothing before reuse.

Eyes: Flush eyes immediately with water for at least 15 min. If irritation persists, call a physician.

Ingestion: Do not induce vomiting. Contact physician or emergency medical facility immediately.

NOTE TO PHYSICIAN: Adrenaline should never be given to person overexposed to methylene chloride.

#### **CHRONIC TOXICITY**

The finding of chronic toxic effects in laboratory animals may indicate toxicity to humans. Overexposure should be avoided, failure to do so could result in injury, illness or even death.

Chronic overexposures to methylene chloride have caused liver and kidney toxic effects in experimental animals.

Carcinogenicity: Methylene chloride has been evaluated for possible cancer causing effects in laboratory animals. Inhalation studies at concentrations of 2000 and 4000 ppm increased the incidence of malignant liver and lung tumors in mice. Three inhalation studies of rats have shown increased incidence of benign mammary gland tumors in female rats at concentrations of 500 ppm and above and increases in benign mammary gland tumors in males at concentrations of 1500 ppm and above. Rats exposed to 50 and 200 ppm via inhalation showed no increased incidence of tumors. Mice and rats exposed by ingestion at levels up to 250 mg/kg/day lifetime and hamsters exposed via inhalation to concentrations up to 3500 ppm lifetime did not show and increased incidence of tumors.

The International Agency for Research on Cancer (IARC) has concluded that, with respect to methylene chloride, there is sufficient evidence of the carcinogenicity to experimental animals and inadequate evidence of the carcinogenicity to humans, resulting in a classification as a 2B animal carcinogen. The NTP has identified methylene chloride as an animal carcinogen. Methylene chloride is listed on the IARC and NTP carcinogen list but not by OSHA. The state of California has listed methylene chloride under Proposition 65 as a chemical known to the state to cause cancer.

Epidemiology studies of 751 humans chronically exposed to methylene chloride in the workplace of which 252 were exposed for a minimum of 20 years did not demonstrate any increase in deaths caused by cancer or cardiac problems. A second study of 2,227 workers confirmed these results.

Reproductive Toxicity: Reproductive toxicity tests have been conducted to evaluate the adverse effects methylene chloride may have reproduction and offspring of laboratory animals. The results indicate the methylene chloride does not cause birth defects in laboratory animals.

CARCINOGENICITY:	ACGIH	IARC	NTP	OSHA
Methylene Chloride	A2	2B	Yes	Yes

## **VII. PERSONAL PROTECTION AND CONTROLS**

### **RESPIRATORY PROTECTION**

Where vapor concentration exceeds or is likely to exceed 50 ppm, an approved full face respirator with organic vapor canister is acceptable. Approved self-contained breathing apparatus or air line respirator with full facepiece, is required for vapor concentrations above 1000 ppm and for spills and/or emergencies. Follow any applicable respirator use standards and regulations.

#### **VENTILATION**

Do not use in closed or confined space. Open doors and/or windows. Use ventilation to maintain exposure levels below 50 ppm (TWA).

#### **SKIN PROTECTION**

Wear solvent-resistant gloves such as Viton, polyvinyl alcohol or equivalent. Solvent-resistant boots, apron, headgear and/or faceshield should be worn where splashing is possible.

#### **HYGIENE**

Avoid contact with skin and avoid breathing vapors. Do not eat, drink or smoke in work area. Wash hands prior to eating, drinking or using the restroom. Any clothing or shoes which become contaminated with methylene chloride should be removed immediately and thoroughly laundered before wearing again.

#### **OTHER CONTROL MEASURES**

To determine exposure level(s), monitoring should be performed regularly. Safety shower and eyewash station should be available. NOTE: Protective equipment and clothing should be selected, used and maintained according to applicable standards and regulations. For further information, contact the clothing or equipment manufacturer.

### **VIII. STORAGE AND HANDLING PRECAUTIONS**

Follow protective controls set forth in Section VII when handling this product. Store labeled, sealed containers in a cool, dry, well-ventilated area out of sunlight. Prevent water or moist air from entering storage tanks or containers. Do not cut or weld on empty or full drums. Aluminum equipment should not be used for storage and/or transfer. Contact with aluminum parts in a pressurizable fluid system may cause violent reactions. Consult equipment supplier for further information. Vapors are heavier than air and will collect in low areas. Do not enter confined spaces such as tanks or pits without following proper entry procedures as required by 29 CFR 1910.146. Do not remove or deface label. Do not reuse drum without recycling or reconditioning in accordance with any applicable federal, state or local laws.

SARA Title III Hazardous Categories: Immediate Health, Delayed Health

### **IX. SPILL, LEAK AND DISPOSAL PRACTICES**

#### **STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

Evacuate the area, ventilate and avoid breathing vapors. Dike area to contain spill. If spill occurs indoors, turn off air conditioning and/or heating system, to prevent vapors from contaminating entire building. Clean up area (wear protective equipment - refer to Section VII) by mopping or with absorbent material and place in closed containers for disposal. Avoid contamination of ground and surface waters. Do not flush to sewer. Reportable Quantity (RQ) is 1000 lbs. Notify National Response Center (800-424-8802) of uncontained releases to the environment in excess of the RQ.

#### **WASTE DISPOSAL METHOD**

Recovered liquids may be sent to a licensed reclaimer or incineration facility. Contaminated material must be disposed of in a permitted waste management facility. Consult federal, state or local disposal authorities for approved procedures.

### **X. TRANSPORTATION**

#### **DOT HAZARD CLASSIFICATION**

Dichloromethane, 6.1, UN 1593, PG III, RQ

#### **PLACARD REQUIRED**

KEEP AWAY FROM FOOD, 1593, Class 6

#### **LABEL REQUIRED**

KEEP AWAY FROM FOOD, 1593, Class 6

Label as required by OSHA Hazard Communication Standard and any applicable state and local regulations.