Material Safety Data Sheet

Dichloromethane, OmniSolv®, HR-GC, For High Resolution Gas Chromatography

Section 1. Product and Company Identification

Product name: Dichloromethane, OmniSolv®, HR-GC, For High Resolution Gas Chromatography
Product code: DX0837
Synonym: Methylene Chloride
Material uses: Other non-specified Industry: Analytical reagent.
Manufacturer: EMD Chemicals Inc.
P.O. Box 70
480 Democrat Road
Gibbstown, NJ 08027
856-423-6300 Technical Service
Monday - Friday: 8:00 - 5:00 PM

Validation date: 1/15/2007.
Print date: 
In case of emergency: 800-424-9300 CHEMTREC (USA)
613-996-6666 CANUTEC (Canada)
24 Hours/Day: 7 Days/Week

Section 2. Hazards Identification

Physical state: Liquid. (Colorless.)
Odor: Ethereal.
OSHA/HCS status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency overview:
WARNING!
CANCER HAZARD.
CAN CAUSE CANCER.
HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED.
CAUSES SEVERE EYE IRRITATION.
CAUSES RESPIRATORY TRACT AND SKIN IRRITATION.
CAUSES DAMAGE TO THE FOLLOWING ORGANS: LUNGS, LIVER, CARDIOVASCULAR SYSTEM, SKIN, CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA.
WARNING: This product contains chemical/chemicals known to the state of California to cause cancer.
Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Risk of cancer depends on duration and level of exposure.

Routes of entry:
Potential acute health effects:

Eyes: Severely irritating to eyes.
Skin: Toxic in contact with skin. Irritating to skin.
Inhalation: Toxic by inhalation. Irritating to respiratory system.
Ingestion: Toxic if swallowed.
Carcinogenic effects: Can cause cancer. Risk of cancer depends on duration and level of exposure.
Mutagenic effects: No known significant effects or critical hazards.
Teratogenicity / Reproductive toxicity: No known significant effects or critical hazards.
Medical conditions aggravated by over-exposure: Repeated skin exposure can produce local skin destruction or dermatitis. Repeated or prolonged exposure to the substance can produce lung damage. Repeated or prolonged contact with spray or mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to the substance can produce target organs damage.

See toxicological information (section 11)

Section 3. Composition/Information on Ingredients

United States
Name: Dichloromethane
CAS number: 75-09-2
% by Weight: 100
Section 4. First Aid Measures

Eye contact: Get medical attention immediately. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Chemical burns must be treated promptly by a physician.

Skin contact: Get medical attention immediately. Flush contaminated skin with plenty of water. Continue to rinse for at least 10 minutes. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing or wear gloves. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Inhalation: Get medical attention immediately. Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Ingestion: Get medical attention immediately. Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Section 5. Fire Fighting Measures

Flammability of the product: No specific hazard.
Products of combustion: These products are carbon oxides (CO, CO₂), halogenated compounds, hydrogen chloride.

Extinguishing media Suitable: Use an extinguishing agent suitable for the surrounding fire.
Not suitable: None known.
Special exposure hazards: Not available.
Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental Release Measures

Personal precautions: Immediately contact emergency personnel. Keep unnecessary personnel away.
Environmental precautions: Use suitable protective equipment.
Methods for cleaning up: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 7. Handling and Storage

Handling: Do not ingest. Avoid contact with eyes, skin and clothing. Keep container closed. Use only with adequate ventilation. Avoid breathing vapor or mist. Wash thoroughly after handling.
Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8. Exposure Controls/Personal Protection

Product name: Dichloromethane
Exposure limits: ACGIH (United States, 1996).
TWA: 174 mg/m³
OSHA (United States, 1989).
TWA: 25 ppm
STEL: 125 ppm
ACGIH TLV (United States, 1/2006). Notes: Substance identified by other sources as a suspected or confirmed human carcinogen. 1996 Adoption Substances for which the TLV is higher than the OSHA Permissible Exposure Limit (PEL) and/or the NIOSH Recommended Exposure Limit (REL). See CFR 58(124):36338-33351, June 30, 1993, for revised OSHA PEL. Refers to Appendix A -- Carcinogens.
TWA: 174 mg/m³ 8 hour/hours. Form: All forms
TWA: 50 ppm 8 hour/hours. Form: All forms
Methylene chloride
STEL: 125 ppm 15 minute/minutes. Form: All forms
TWA: 25 ppm 8 hour/hours. Form: All forms
OSHA PEL Z2 (United States, 8/1997). Notes: See 1910.1052
Methylene chloride
STEL: 125 ppm 15 minute/minutes. Form: All forms
TWA: 25 ppm 8 hour/hours. Form: All forms
Consult local authorities for acceptable exposure limits.

Engineering measures: Use only with adequate ventilation. If user operations generate dust, fumes, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Personal protection

Eyes: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. Recommended: splash goggles.

Skin: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Body: Recommended: lab coat.

Respiratory: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: Viton.

Hygiene measures:
Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 9. Physical and Chemical Properties

Physical state: Liquid. (Colorless.)
Auto-ignition temperature: 556.11 to 614.85°C (1033 to 1138.7°F)
Flammable limits: Lower: 13% Upper: 23%
Odor: Ethereal.
Molecular weight: 84.93 gm/cml
Molecular formula: C₂H₂Cl₂
Boiling/condensation point: 40°C (104°F)
Melting/freezing point: -96.65°C (-142°F)
Relative density: 1.33 (Water = 1)
Vapor pressure: 45.3 kPa (340 mm Hg) (at 20°C)
Vapor density: 2.9 (Air = 1)
Vocality: 100% (v/v)
Odor threshold: 214 ppm
Evaporation rate: 14.5 compared with Butyl acetate.
VOC: 100 (%)

Section 10. Stability and Reactivity

Stability and reactivity: The product is stable.
Incompatibility with various substances: Reactive or incompatible with the following materials: oxidizing materials and metals.
Hazardous decomposition products: These products are halogenated compounds, hydrogen chloride.
Hazardous polymerization: Will not occur.
Section 11. Toxicological Information

Toxicity data
United States
Product/ingredient name  Test  Result  Route  Species
Dichloromethane  LD50  985 mg/kg  Oral  Rat
LD50  1600 mg/kg  Oral  Rat
LD50  2000 mg/kg  Oral  Rabbit
LDLo  1900 mg/kg  Oral  Rabbit
LDLo  357 mg/kg  Oral  human

Chronic effects on humans: CARCINOGENIC EFFECTS: Classified + (Proven.) by OSHA. (Table 1) by NIOSH. Classified A3 (Proven for animals) by ACGIH, 2B (Possible for humans) by IARC, 3 (Possible for humans) by European Union. Classified 2 (Reasonably anticipated to be human carcinogens) by NTP.
Causes damage to the following organs: lungs, liver, cardiovascular system, skin, central nervous system (CNS), eye, lens or cornea.

Other toxic effects on humans: Extremely hazardous in case of eye contact (irritant).
Very hazardous in case of skin contact (sensitizer), of ingestion, of inhalation (lung irritant).
Hazardous in case of skin contact (irritant).

Specific effects
Carcinogenic effects: Can cause cancer. Risk of cancer depends on duration and level of exposure.
Mutagenic effects: No known significant effects or critical hazards.
Teratogenicity / Reproductive toxicity: No known significant effects or critical hazards.
Sensitization:
Ingestion: No known significant effects or critical hazards.
Inhalation: Irritating to respiratory system.
Eyes: Severely irritating to eyes.
Skin: Irritating to skin.

Section 12. Ecological Information

Ecotoxicity data
United States
Product/ingredient name  Species  Period  Result
Dichloromethane  Pimephales promelas (EC50)  48 hour/hours  99 mg/l
Selenantra capricornutum (EC50)  48 hour/hours  >500 mg/l
Daphnia magna (EC50)  96 hour/hours  1250 mg/l
Pimephales promelas (LC50)  96 hour/hours  220 mg/l
Lepomis macrochirus (LC50)  96 hour/hours  254 mg/l
Brachydanio rerio (LC50)

Environmental precautions: No known significant effects or critical hazards.
Products of degradation: These products are carbon oxides (CO, CO2) and water, halogenated compounds.
Toxicity of the products of biodegradation: The products of degradation are as toxic as the product itself.

Section 13. Disposal Considerations

Waste disposal: The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional or local authority requirements.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport Information

Regulatory information  UN number  Proper shipping name  Class  PG*  Label  Additional information
Section 15. Regulatory Information

United States

HCS Classification: Toxic material, Irritating material, Carcinogen, Target organ effects.

U.S. Federal regulations: TSCA 8(b) inventory; Listed. SARA 302/304/311/312 extremely hazardous substances: No products were found. SARA 302/304 emergency planning and notification: No products were found. SARA 302/304/311/312 hazardous chemicals: Dichloromethane. SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Dichloromethane: Immediate (acute) health hazard, Delayed (chronic) health hazard. Clean Water Act (CWA) 307: Dichloromethane. Clean Air Act (CAA) 112: No products were found. Clean Air Act (CAA) 112 accidental release prevention: No products were found. Clean Air Act (CAA) 112 regulated flammable substances: No products were found. Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

SARA 313

Product name: Dichloromethane
CAS number: 75-09-2

Concentration Form R - Reporting requirements: 100

Supplier notification: 100

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.


WARNING: This product contains chemical/chemicals known to the state of California to cause cancer.

Ingredient name: Dichloromethane

Canada

WHMIS (Canada): Class D-1B: Material causing immediate and serious toxic effects (Toxic). Class D-2A: Material causing other toxic effects (Very toxic). Class D-2B: Material causing other toxic effects (Toxic).

CEPA DSL/CEPA NDSL: CEPA DSL: Dichloromethane

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

EU regulations

Hazard symbol/symbols: X

Risk phrases: R40- Limited evidence of a carcinogenic effect.

International regulations

Korea (TCCL): Dichloromethane
Philippines (RA6969): Dichloromethane

### Section 16. Other Information

#### Label requirements

<table>
<thead>
<tr>
<th>National Fire Protection Association (U.S.A.)</th>
<th>Flammability</th>
<th>Health</th>
<th>Instability</th>
<th>Special</th>
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<tr>
<td></td>
<td>1</td>
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**WARNING:**
This product contains chemical/chemicals known to the state of California to cause cancer.

The statements contained herein are based upon technical data that EMD Chemicals Inc. believes to be reliable, are offered for information purposes only and as a guide to the appropriate precautionary and emergency handling of the material by a properly trained person having the necessary technical skills. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use, storage and disposal of these materials and the safety and health of employees and customers and the protection of the environment. EMD CHEMICALS INC. MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE, WITH RESPECT TO THE INFORMATION HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS.