



Material Safety Data Sheet

Dichloromethane

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Dichloromethane

OTHER/GENERIC NAMES: Methylene Chloride, Methylene Dichloride, DCM, MC

PRODUCT USE: Solvent

MANUFACTURER: Honeywell
1953 South Harvey Street
Muskegon, MI 49442

DISTRIBUTOR: VWR International
1310 Goshen Parkway
West Chester, PA 19380

FOR MORE INFORMATION CALL:
(Monday-Friday, 8:00am-5:00pm)
1-800-932-5000

IN CASE OF EMERGENCY CALL:
(24 Hours/Day, 7 Days/Week)
1-800-424-9300 (USA Only)
For Transportation Emergencies:
1-800-424-9300 (CHEMTREC - Domestic)
1-613-996-6666(CANUTEC- Canada)

NOTE: Emergency telephone numbers are to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to customer service.

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT NAME</u>	<u>CAS NUMBER</u>	<u>WEIGHT %</u>
Dichloromethane	75-09-2	100

Component Information/Information on Non-Hazardous Components

This product is considered to be hazardous according to the criteria specified in 29 CFR 1910.1200 (Hazard Communication Standard) and the Canadian Controlled Product Regulations.

Trace impurities and additional material names not listed above may also appear in Section 15 toward the end of the MSDS. These materials may be listed for local "Right-To-Know" compliance and for other reasons.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: This product is a clear liquid. Has a sweet, mild odor. Not flammable. The product causes irritation of eyes, skin and mucous membranes. Harmful by inhalation, in contact with skin and if swallowed. May be fatal if inhaled. Causes headache, drowsiness or other effects to the central nervous system. Limited evidence of a carcinogenic effect. Do not allow product to contact skin, eyes and clothing. Do not breathe vapours.



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POTENTIAL HEALTH HAZARDS

SKIN: Irritating to skin. If liquid remains on skin, can cause skin burns. Skin absorption may cause toxic effects similar to those described for inhalation. Repeated or extended contact may cause erythema (reddening of the skin) or dermatitis, resulting from a defatting action on tissue.

EYES: Irritating to eyes. Symptoms include itching, burning, redness and tearing. Corneal injury may occur.

INHALATION: Harmful by inhalation. Vapours may cause drowsiness and dizziness. Inhalation of high vapour concentrations can cause CNS-depression and narcosis. Severe overexposure may produce more serious symptoms, including coma and risk of kidney damage. Exposure to high concentrations may result in central nervous system depression and respiratory failure and death possibly due to increased carboxyhemoglobin levels in the blood.

INGESTION: Harmful if swallowed. Ingestion may cause burning sensation in the mouth, throat and stomach and gastrointestinal disturbances. Ingestion of this product may result in central nervous system effects including headache, sleepiness, dizziness, slurred speech and blurred vision.

DELAYED EFFECTS: Repeated or prolonged exposure may cause damage to the blood, heart, liver and kidney. Chronic exposure may cause headache, mental confusion, depression, bronchitis, loss of appetite, nausea, lack of balance, and visual disturbances. Exposure to high concentrations may result in increased carboxyhemoglobin levels in the blood, which can lead to central nervous system depression and respiratory failure and death.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing respiratory diseases, eye, blood, liver or kidney dysfunctions, or central nervous system disorders may be aggravated by exposure.

Ingredients found on one of the OSHA designated carcinogen lists are listed below.

<u>INGREDIENT NAME</u>	<u>NTP STATUS</u>	<u>IARC STATUS</u>	<u>OSHA LIST</u>
Dichloromethane (75-09-2)	Reasonably Anticipated To Be A Carcinogen (Possible Select Carcinogen)	Group 2B (possibly carcinogenic to humans)	Carcinogen

4. FIRST AID MEASURES

SKIN: Wash off immediately with soap and plenty of water. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Obtain medical attention.

EYES: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

INHALATION: Move to fresh air in case of accidental inhalation of vapours. If not breathing, give artificial respiration. If breathing is difficult, give oxygen, provided a qualified operator is available. Call a physician immediately.



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INGESTION: DO NOT induce vomiting. Immediate medical attention is required.

ADVICE TO PHYSICIAN: Treat symptomatically.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: Would not flash
FLASH POINT METHOD: Closed Cup
AUTOIGNITION TEMPERATURE: 1033°F (556°C)
UPPER FLAME LIMIT (volume % in air): 19
LOWER FLAME LIMIT (volume % in air): 12
FLAME PROPAGATION RATE (solids): Not applicable
OSHA FLAMMABILITY CLASS: Not applicable

EXTINGUISHING MEDIA:

Use alcohol-resistant foam, carbon dioxide (CO₂) or dry chemical.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Not flammable. Irritating and/or toxic gases may be emitted upon the product's decomposition.

Hazardous combustion products may include carbon monoxide, carbon dioxide (CO₂) phosgene, hydrogen chloride gas and chlorine gas.

SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS:

Water may be ineffective. Fire-fighters should wear self-contained, NIOSH-approved breathing apparatus and full protective clothing. Fire or intense heat may cause violent rupture of packages. In the event of fire, cool tanks with water spray. Do not use a solid water stream as it may scatter and spread fire. After fire, flush area with water to prevent re-ignition. Do not allow run-off from fire fighting to enter drains or water courses.

6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE:

Containment Procedures: Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Stop flow of material, if this is without risk.

Cleanup Procedures: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Shovel into suitable container for disposal. Do not allow product to enter sewer or waterways.

Evacuation Procedures: Keep unnecessary people away. Isolate area.

Special Procedures: Use personal protective equipment.

Spills and releases may have to be reported to Federal and/or local authorities. See Section 15 regarding reporting requirements.



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7. HANDLING AND STORAGE

NORMAL HANDLING: (Always wear recommended personal protective equipment.)

Ensure adequate ventilation. Do not allow product to contact skin, eyes and clothing. Do not breathe vapours. Keep away from fire, sparks and heated surfaces. Keep container tightly closed in a dry and well-ventilated place.

STORAGE RECOMMENDATIONS:

Keep in a well-ventilated place. Empty containers may retain product residue. Store away from incompatible substances. Re-open used containers with caution. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Protect from extremes of temperature and direct sunlight.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapours or mists generated from the handling of this product or use product in closed system. Local exhaust ventilation is preferred. Prevent electrostatic charge build-up by using common bonding and grounding techniques.

PERSONAL PROTECTIVE EQUIPMENT

SKIN PROTECTION:

Wear impervious gloves and impervious clothing. Gloves must be inspected prior to use. For leak, spills, or other emergency, use full protective equipment.

EYE PROTECTION:

For handling in closed ventilation system, wear safety glasses with side-shields. For situations where splashing is likely or for leak, spill or other emergency, use chemical goggles and face-shield. Remove contact lenses.

RESPIRATORY PROTECTION:

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

ADDITIONAL RECOMMENDATIONS:

Provide eyewash stations and quick-drench shower facilities.

EXPOSURE GUIDELINES

Component Exposure Limits

Dichloromethane (75-09-2)

ACGIH:	50 ppm TWA
OSHA:	25 ppm TWA (8 hr) (Skin); 125 ppm STEL (15 min) (Skin); 1 2.5 ppm Action Level (See 29 CFR 1910.1052)
OSHA (Vacated):	500 ppm TWA 2000 ppm STEL (5 min in any 3 hrs) 1000 ppm Ceiling
Alberta:	50 ppm TWA; 174 mg/m ³ TWA
British Columbia:	IARC Category 2B - Possible Human Carcinogen 25 ppm TWA



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Manitoba:	100 ppm TWA; 350 mg/m ³ TWA 500 ppm STEL; 1740 mg/m ³ STEL
New Brunswick:	50 ppm TWA; 174 mg/m ³ TWA
Northwest Territories:	100 ppm TWA; 347 mg/m ³ TWA 500 ppm STEL; 1737 mg/m ³ STEL
Nova Scotia:	50 ppm TWA
Nunavut:	100 ppm TWA; 347 mg/m ³ TWA 500 ppm STEL; 1737 mg/m ³ STEL
Ontario:	50 ppm TWA _{EV} ; 175 mg/m ³ TWA _{EV}
Quebec:	50 ppm TWA _{EV} ; 174 mg/m ³ TWA _{EV}
Saskatchewan:	174 mg/m ³ TWA; 50 ppm TWA 218 mg/m ³ STEL; 63 ppm STEL
Yukon:	200 ppm TWA; 700 mg/m ³ TWA (listed as Dichloromethane); 720 mg/m ³ TWA (listed as Dichloromethane) 250 ppm STEL; 870 mg/m ³ STEL; 200 ppm STEL (listed under Dichloromethane); 720 mg/m ³ STEL (listed under Dichloromethane)

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Clear, colorless liquid
PHYSICAL STATE:	Liquid
MOLECULAR WEIGHT:	84.94
CHEMICAL FORMULA:	CH ₂ Cl ₂
ODOR:	Mild, sweet (similar to Chloroform)
SPECIFIC GRAVITY (water = 1.0):	1.33
SOLUBILITY IN WATER (weight %):	1.32 gm/ 100gm @ 77°F (25°C)
pH:	Not applicable
BOILING POINT:	140°F (40°C)
MELTING POINT:	-139°F (-95°C)
VAPOUR PRESSURE:	350 mm Hg at 68°F (20°C)
VAPOUR DENSITY (air = 1.0):	2.9
EVAPORATION RATE:	0.7
% VOLATILES:	100
FLASH POINT:	Would not flash
(Flash point method and additional flammability data are found in Section 5.)	
COMPARED TO:	Ethyl Ether = 1

10. STABILITY AND REACTIVITY

NORMALLY STABLE? (CONDITIONS TO AVOID):

Stable under recommended storage conditions.

Avoid: Incompatible products

INCOMPATIBILITIES:

Keep away from oxidising agents, strongly alkaline and strongly acid materials, metals, aluminum, and magnesium.



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HAZARDOUS DECOMPOSITION PRODUCTS:

Hazardous decomposition products include carbon monoxide, carbon dioxide (CO₂) phosgene, hydrogen chloride gas and chlorine gas.

HAZARDOUS POLYMERISATION:

Hazardous polymerisation does not occur.

11. TOXICOLOGICAL INFORMATION

Component Analysis - LD50/LC50

Dichloromethane (75-09-2)

Rat: LD50 - Route: Oral; Dose: 1410 mg/kg
LD50 - Route: Dermal; Dose: >2000 mg/kg

IMMEDIATE (ACUTE) EFFECTS:

The product causes irritation of eyes, skin and mucous membranes. Harmful by inhalation, in contact with skin and if swallowed. Causes headache, drowsiness or other effects to the central nervous system.

Exposure to high concentrations can lead to increased carboxyhemoglobin levels in the blood. Carboxyhemoglobin can lead to respiratory failure and central nervous system depression by decreasing the oxygen carrying capacity of blood. Persons who smoke tobacco products will experience an intensified elevation of carboxyhemoglobin levels. Memory loss, central nervous and psychomotor disturbances, headaches, and other effects are also possibly related to carboxyhemoglobin levels.

DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS:

Repeated or prolonged exposure may cause damage to the heart, liver and kidney. Chronic exposure may cause headache, mental confusion, depression, bronchitis, loss of appetite, nausea, lack of balance, and visual disturbances

Mutagenicity: mutagenic in salmonella typhimurium Ames assay
: Gene mutation in hamster ovary cells (3,000 ppm)
: DNA damage in mouse liver cells (400 u mol/L)

OTHER DATA:

Limited evidence of a carcinogenic effect.

Component Carcinogenicity

Dichloromethane (75-09-2)

ACGIH: A3 - Confirmed animal carcinogen with unknown relevance to humans
OSHA: Suspect Carcinogen
NIOSH: Potential occupational carcinogen
NTP: Reasonably Anticipated To Be A Carcinogen (Possible Select Carcinogen)
IARC: Monograph 71, 1999 (Group 2B (possibly carcinogenic to humans))



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15. REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA)

TSCA INVENTORY STATUS: All components are on the U.S. EPA TSCA Inventory List.

OTHER TSCA ISSUES: Additional TSCA information may exist. Contact VWR if you have questions regarding your application or use of this product.

SARA TITLE III/CERCLA

"Reportable Quantities" (RQs) and/or "Threshold Planning Quantities" (TPQs) exist for the following ingredients.

<u>INGREDIENT NAME</u>	<u>SARA/CERCLA RQ (lb)</u>	<u>SARA EHS TPO (lb)</u>
Dichloromethane (75-09-2)	1000	None

Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center [(800) 424-8802] and to your Local Emergency Planning Committee.

SECTION 311 HAZARD CLASS: Immediate. Delayed.

SARA 313 TOXIC CHEMICALS:

The following ingredients are SARA 313 "Toxic Chemicals". CAS numbers and weight percents are found in Section 2.

<u>INGREDIENT NAME</u>	<u>COMMENT</u>
Dichloromethane (75-09-2)	0.1 % de minimis concentration

STATE RIGHT-TO-KNOW

In addition to the ingredients found in Section 2, the following are listed for state right-to-know purposes.

<u>INGREDIENT NAME</u>	<u>WEIGHT %</u>	<u>COMMENT</u>
Dichloromethane (75-09-2)	100	CA, MA, MN, NJ, PA, RI

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause cancer.

ADDITIONAL REGULATORY INFORMATION:

None.

WHMIS CLASSIFICATION (CANADA):

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all information required by CPR.



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WHMIS Classification:

D1B- Very Toxic Material
D2A- Chronic Toxic Effects
D2B- Toxic Material

FOREIGN INVENTORY STATUS:

Component Analysis - Inventory

Component	CAS #	TSCA	CAN	EEC	AUST	PHIL	MITI	KOREA	CHINA
Methylene chloride	75-09-2	Yes	DSL	EINECS	Yes	Yes	Yes	Yes	Yes

16. OTHER INFORMATION

CURRENT ISSUE DATE: January 9, 2006

PREVIOUS ISSUE DATE: New MSDS.

CHANGES TO MSDS FROM PREVIOUS ISSUE DATE ARE DUE TO THE FOLLOWING:

OTHER INFORMATION: As per the OSHA Hazard Communication Standard, 1910.1200, the information contained within this MSDS must be given to those persons using this material. For laboratory use only. Not for food or drug use. Do not store with foodstuffs.

KEY/LEGEND: ACGIH = American Conference of Governmental Industrial Hygienists; CAS = Chemical Abstracts Service; CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act; CFR = Code of Federal Regulations; CPR = Controlled Products Regulations; DOT = Department of Transportation; DSL = Domestic Substances List; EINECS = European Inventory of Existing Commercial Chemical Substances; EPA = Environmental Protection Agency; IARC = International Agency for Research on Cancer; IATA = International Air Transport Association; mg/Kg = milligrams per Kilogram; mg/L = milligrams per Liter; mg/m³ = milligrams per Cubic Meter; MSHA = Mine Safety and Health Administration; NA = Not Applicable or Not Available; NIOSH = National Institute for Occupational Safety and Health; NJTSR = New Jersey Trade Secret Registry; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; SARA = Superfund Amendments and Reauthorization Act; TDG = Transport Dangerous Goods; TSCA = Toxic Substances Control Act; WHMIS = Workplace Hazardous Materials Information System.

End of Sheet #BDH-120