Dichloromethane (BDH1113-19L, BDH1113-204L, BDH1113-4LG)

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Dichloromethane (BDH1113-19L, BDH1113-204L, BDH1113-4LG)
MSDS Number : 000000011714
Product Use Description : Solvent
Manufacturer : Honeywell
1953 South Harvey Street
Muskegon, MI 49442
Manufactured for : VWR International LLC
Radnor Corporate Center
Building One
Suite 200
100 Matsonford Road
Radnor PA 19087
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)
1-613-966-6666 (CANUTEC - Canada)

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview
Form : liquid, clear
Color : colourless
Odor : sweet mild
Hazard Summary : This product is not flammable at ambient temperatures and atmospheric pressure. May be harmful if swallowed. May be harmful if absorbed through skin. May be fatal if inhaled in large quantities. Irritating to eyes, respiratory system and skin. The product may be absorbed through the skin. Repeated exposure may cause skin dryness or cracking. Potential cancer hazard.
Confirmed animal carcinogen with unknown relevance to humans.

**Potential Health Effects**

**Skin**
- Irritating to skin.
- May cause systemic poisoning with symptoms paralleling those of inhalation.
- May cause burns or external ulcers.
- Prolonged or repeated skin contact with liquid may cause defatting resulting in drying, redness and possible blistering.

**Eyes**
- Irritating to eyes.
- Causes itching, burning, redness and tearing.
- May cause corneal injury.

**Ingestion**
- May be harmful if swallowed.
- May cause irritation of the gastrointestinal tract.

**Inhalation**
- Causes respiratory tract irritation.
- Causes headache, drowsiness or other effects to the central nervous system.
- Vapours may cause drowsiness and dizziness.
- Inhalation of high vapour concentrations can cause CNS-depression and narcosis.
- High concentration of vapours may induce unconsciousness.
- Repeated or prolonged exposure to the substance can produce kidney damage.
- Exposure to high concentrations can lead to increased carboxyhemoglobin levels in the blood. Carboxyhemoglobin can lead to central nervous system depression, respiratory failure and death by decreasing the oxygen carrying capacity of blood.

**Chronic Exposure**
- Repeated or prolonged exposure to the substance can produce kidney damage.
- Repeated or prolonged exposure to the substance can produce liver damage.
- Repeated and prolonged exposure to solvents may cause brain and nervous system damage.
- Chronic exposure may cause headache, confusion, tremors, memory loss, slurred speech and anorexia.
- Prolonged or repeated skin contact with liquid may cause defatting resulting in drying, redness and possible blistering.
- Exposure to high concentrations can lead to increased carboxyhemoglobin levels in the blood. Carboxyhemoglobin can lead to central nervous system depression, respiratory
failure and death by decreasing the oxygen carrying capacity of blood.
Potential cancer hazard.
Confirmed animal carcinogen with unknown relevance to humans.

Aggravated Medical Condition:
- Respiratory disorders
- Eye disorders
- Blood disorders
- Kidney disorders
- Liver disorders
- Neurological disorders
- Skin disorders
- Heart disease

Target Organs:
- Eyes
- Skin
- Cardiovascular system
- Central nervous system
- Heart
- Liver
- Kidney

Carcinogenicity:

**NTP:**
- Dichloromethane 75-09-2
  - Reasonably Anticipated to be a Human Carcinogen.

**IARC:**
- Dichloromethane 75-09-2
  - Group 2B: Possibly carcinogenic to humans

**OSHA:**
- Dichloromethane 75-09-2
  - Potential cancer hazard.

**ACGIH:**
- Dichloromethane 75-09-2
  - A3: Confirmed animal carcinogen

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Formula:** CH₂Cl₂

**Chemical nature:** Substance

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

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SECTION 4. FIRST AID MEASURES

Inhalation : Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Use oxygen as required, provided a qualified operator is present. Call a physician.

Skin contact : Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Call a physician.

Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician.

Ingestion : Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Call a physician.

Notes to physician

Treatment : Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Dry chemical
Carbon dioxide (CO2)
Foam
Cool closed containers exposed to fire with water spray.

Specific hazards during firefighting : This product is not flammable at ambient temperatures and atmospheric pressure. Exposure to decomposition products may be a hazard to health. In case of fire hazardous decomposition products may be produced such as:
Phosgene
Chlorine (Cl2)
Carbon monoxide
Carbon dioxide (CO2)
Gaseous hydrogen chloride (HCl).

Special protective equipment for firefighters : Wear self-contained breathing apparatus and protective suit.
SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Wear personal protective equipment. Immediately evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Isolate the affected area. Confine entry into the affected area to those persons properly protected (see Section 8 of MSDS). Ensure adequate ventilation. Avoid accumulation of vapours in low areas. Remove all sources of ignition. Do not swallow. Avoid breathing vapors, mist or gas. Avoid contact with skin, eyes and clothing.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided. Do not flush into surface water or sanitary sewer system. Do not allow run-off from fire fighting to enter drains or water courses.

Methods for cleaning up: Ventilate the area. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Shovel into suitable container for disposal. Dispose of absorbed material in accordance with the regulations.

SECTION 7. HANDLING AND STORAGE

Handling

Handling: Wear personal protective equipment. Use only in well-ventilated areas. Keep container tightly closed. Do not smoke. Do not swallow. Avoid breathing vapors, mist or gas. Avoid contact with skin, eyes and clothing.

Advice on protection against fire and explosion: The product is not flammable. Normal measures for preventive fire protection. Keep product and empty container away from heat and sources.
Storage

Requirements for storage areas and containers:
- Protect from physical damage.
- Keep containers tightly closed in a dry, cool and well-ventilated place.
- Containers which are opened must be carefully resealed and kept upright to prevent leakage.
- Keep away from heat and sources of ignition.
- Keep away from direct sunlight.
- Store away from incompatible substances.
- Container hazardous when empty.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective measures:
- Ensure that eyewash stations and safety showers are close to the workstation location.

Engineering measures:
- Use with local exhaust ventilation.
  - Prevent vapor buildup by providing adequate ventilation during and after use.

Eye protection:
- Do not wear contact lenses.
  - Wear as appropriate:
    - Safety glasses with side-shields
    - If splashes are likely to occur, wear:
      - Goggles or face shield, giving complete protection to eyes

Hand protection:
- Solvent-resistant gloves
  - Gloves must be inspected prior to use.
  - Replace when worn.

Skin and body protection:
- Wear as appropriate:
  - Solvent-resistant apron
  - Solvent-resistant gloves
  - If splashes are likely to occur, wear:
    - Protective suit

Respiratory protection:
- In case of insufficient ventilation, wear suitable respiratory equipment.
  - Wear a positive-pressure supplied-air respirator.
  - For rescue and maintenance work in storage tanks use
Hygiene measures: When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product. Keep working clothes separately. Remove and wash contaminated clothing before re-use. Do not swallow. Avoid breathing vapors, mist or gas. Avoid contact with skin, eyes and clothing.

This material has an established AIHA ERPG exposure limit. The current list of ERPG exposure limits can be found at http://www.aiha.org/insideaiha/GuidelineDevelopment/ERPG/Documents/2011erpgweelhandbook_table-only.pdf.

### Exposure Guidelines

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Update</th>
<th>Basis</th>
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</thead>
<tbody>
<tr>
<td>Dichloromethane</td>
<td>75-09-2</td>
<td>TWA: time weighted average</td>
<td>(50 ppm)</td>
<td>2008</td>
<td>ACGIH:US. ACGIH Threshold Limit Values</td>
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REF: Reference:

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<th></th>
<th>SKIN_DES : Skin designation:</th>
<th>Can be absorbed through the skin.</th>
<th>02 2006</th>
<th>OSHASP:US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</th>
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</thead>
</table>
SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : liquid, clear

Colour : colourless

Odour : sweet mild

pH : Note: not applicable

Melting point/freezing point : -95 °C

Boiling point/boiling range : 40 °C

Flash point : Note: does not flash

Evaporation rate : 0.7
  Method: Compared to Ether (anhydrous).

Lower explosion limit : 12 %(V)

Upper explosion limit : 19 %(V)

Vapour pressure : 466.63 hPa
  at 20 °C (68 °F)

Vapour density : 2.9
  Note: (Air = 1.0)

Density : 1.33 g/cm³

Water solubility : 13.2 g/l at 25 °C

Ignition temperature : 556 °C
SECTION 10. STABILITY AND REACTIVITY

**Conditions to avoid:**
- Heat, flames and sparks.
- Protect from extreme heat and cold.
- Keep away from direct sunlight.

**Materials to avoid:**
- Oxidizing agents
- Strong acids and strong bases
- Metals
- Aluminium
- Lithium
- Magnesium
- Sodium
- May attack many plastics, rubbers and coatings.

**Hazardous decomposition products:**
In case of fire hazardous decomposition products may be produced such as:
- Phosgene
- Chlorine (Cl2)
- Carbon monoxide
- Carbon dioxide (CO2)
- Gaseous hydrogen chloride (HCl).

**Hazardous reactions:**
- Hazardous polymerisation does not occur.
- Stable under recommended storage conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

**Acute oral toxicity:**
- LD50: 1,600 mg/kg
- Species: rat

**Acute inhalation toxicity:**
- LC50: 14400 ppm
- Exposure time: 7 h
- Species: mouse
Acute dermal toxicity : LD50: > 2,000 mg/kg
Species: rat

Skin irritation : Species: rabbit
Result: Moderate skin irritation

Eye irritation : Species: rabbit
Result: Moderate eye irritation

Dichloromethane : Test Method: Ames test
Result: positive

: Test Method: In vitro gene mutation study in mammalian cells
Cell type: Chinese Hamster Ovary Cells
Result: positive

: Test Method: Unscheduled DNA synthesis
Result: positive
Note: Liver cells mouse

Further information : Note: Confirmed animal carcinogen with unknown relevance to humans.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Toxicity to fish : static test
LC50: 310 mg/l
Exposure time: 96 h
Species: Pimephales promelas (fathead minnow)

: flow-through test
LC50: 193 mg/l
Exposure time: 96 h
Species: Pimephales promelas (fathead minnow)

: flow-through test
LC50: 10.95 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)
**Toxicity to daphnia and other aquatic invertebrates.**

- **LC50:** 220 mg/l
- **Exposure time:** 96 h
- **Species:** Lepomis macrochirus (Bluegill sunfish)

- **EC50:** 140 mg/l
- **Exposure time:** 48 h
- **Species:** Daphnia magna (Water flea)

**Toxicity to bacteria**

- **EC50:** 1,000 mg/l
- **Exposure time:** 15 min
- **Species:** Photobacterium phosphoreum

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### SECTION 13. DISPOSAL CONSIDERATIONS

**Disposal methods:** Observe all Federal, State, and Local Environmental regulations.

### SECTION 14. TRANSPORT INFORMATION

<table>
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<th>DOT</th>
<th>UN/ID No.</th>
<th>Proper shipping name</th>
<th>Class</th>
<th>Packing group</th>
<th>Hazard Labels</th>
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<td>DICHLOROMETHANE</td>
<td>6.1</td>
<td>III</td>
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<table>
<thead>
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<th>IATA</th>
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<th>Description of the goods</th>
<th>Class</th>
<th>Packaging group</th>
<th>Hazard Labels</th>
<th>Packing instruction (cargo aircraft)</th>
<th>Packing instruction (passenger aircraft)</th>
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<tr>
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<td>UN 1593</td>
<td>DICHLOROMETHANE</td>
<td>6.1</td>
<td>III</td>
<td>6.1</td>
<td>663</td>
<td>Y642</td>
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</table>
**IMDG**

- UN/ID No.: UN 1593
- Description of the goods: DICHLOROMETHANE
- Class: 6.1
- Packaging group: III
- Hazard Labels: 6.1
- EmS Number: F-A
- Marine pollutant: no

**SECTION 15. REGULATORY INFORMATION**

**Inventories**

- US. Toxic Substances Control Act: On TSCA Inventory
- Australia. Industrial Chemical (Notification and Assessment) Act: On the inventory, or in compliance with the inventory
- Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL): All components of this product are on the Canadian DSL list.
- Japan. Kashin-Hou Law List: On the inventory, or in compliance with the inventory
- Korea. Existing Chemicals Inventory (KECI): On the inventory, or in compliance with the inventory
- Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act: On the inventory, or in compliance with the inventory
- China. Inventory of Existing Chemical Substances: On the inventory, or in compliance with the inventory
- New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand: On the inventory, or in compliance with the inventory

**National regulatory information**

**SARA 302 Components**: SARA 302: No chemicals in this material are subject to the
Material Safety Data Sheet

Dichloromethane (BDH1113-19L, BDH1113-204L, BDH1113-4LG)

reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**: The following components are subject to reporting levels established by SARA Title III, Section 313:
- Dichloromethane 75-09-2

**SARA 311/312 Hazards**: Acute Health Hazard
- Chronic Health Hazard

**CERCLA Reportable Quantity**: 1000 lbs

**California Prop. 65**: WARNING! This product contains a chemical known to the State of California to cause cancer.
- Dichloromethane 75-09-2

**Massachusetts RTK**: Dichloromethane 75-09-2

**New Jersey RTK**: Dichloromethane 75-09-2

**Pennsylvania RTK**: Dichloromethane 75-09-2

**WHMIS Classification**: D1B: Toxic Material Causing Immediate and Serious Toxic Effects
- D2A: Very Toxic Material Causing Other Toxic Effects
- D2B: Toxic Material Causing Other Toxic Effects

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

### SECTION 16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>HMIS III</th>
<th>NFPA</th>
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<td>Health hazard</td>
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<tr>
<td>Flammability</td>
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<tr>
<td>Physical Hazard</td>
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</tr>
<tr>
<td>Instability</td>
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</tr>
</tbody>
</table>

* - Chronic health hazard
Hazard rating and rating systems (e.g. HMIS® III, NFPA): This information is intended solely for the use of individuals trained in the particular system.

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user. This information should not constitute a guarantee for any specific product properties.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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Prepared by: Honeywell Performance Materials and Technologies  Product Stewardship Group