SAFETY DATA SHEET
according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

SECTION 1. Identification

Product identifier

Product number DX0835
Product name Dichloromethane GR ACS
Synonyms DCM
CAS-No. 75-09-2

Relevant identified uses of the substance or mixture and uses advised against

Identified uses Reagent for analysis

Details of the supplier of the safety data sheet

Company EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821, United States of America | General Inquiries: +1-978-715-4321 |
Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)

Emergency telephone 800-424-9300 CHEMTREC (USA)
+1-703-527-3887 CHEMTREC (International)
24 Hours/day; 7 Days/week

SECTION 2. Hazards identification

GHS Classification
Carcinogenicity, Category 2, H351
For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms

Signal Word
Warning

Hazard Statements
H351 Suspected of causing cancer.

Precautionary Statements
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P281 Use personal protective equipment as required.
P308 + P313 IF exposed or concerned: Get medical advice/attention.
P405 Store locked up.
P501 Dispose of contents/container to an approved waste disposal plant.

Other hazards
None known.

SECTION 3. Composition/information on ingredients

Formula CH₂Cl₂ CH₂Cl₂ (Hill)
Synonyms DCM
Molar mass 84.93 g/mol

Hazardous ingredients
*Chemical Name (Concentration)*
CAS-No.
dichloromethane (>90% - <= 100%)
75-09-2
Exact percentages are being withheld as a trade secret.

SECTION 4. First aid measures

Description of first-aid measures

Inhalation
After inhalation: fresh air. Consult a physician.

Skin contact
After skin contact: wash off with plenty of water. Remove contaminated clothing. Consult a physician.

Eye contact
After eye contact: rinse out with plenty of water with the eyelid held wide open. Call in ophthalmologist if necessary.

Ingestion
After swallowing: caution if victim vomits. Risk of aspiration! Keep airways free. Call a physician immediately. Subsequently administer: activated charcoal (20 - 40 g in 10% slurry).

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed
irritant effects, respiratory paralysis, depressed respiration, Drowsiness, Dizziness, Unconsciousness, narcosis, inebriation, Nausea, Vomiting, CNS disorders
Risk of corneal clouding.
The following applies to aliphatic halogenated hydrocarbons in general: systemic effect: narcosis, cardiovascular disorders. Toxic effect on liver, kidneys.

Indication of any immediate medical attention and special treatment needed
No information available.
SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture
Not combustible.
Vapors are heavier than air and may spread along floors.
Ambient fire may liberate hazardous vapors.
Fire may cause evolution of:
Hydrogen chloride gas, Phosgene

Advice for firefighters

Special protective equipment for fire-fighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information
Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions
Do not empty into drains.

Methods and materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

SECTION 7. Handling and storage

Precautions for safe handling
Work under hood. Do not inhale substance/mixture. Avoid generation of vapors/aerosols.

Observe label precautions.

Conditions for safe storage, including any incompatibilities
Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons. Protected from light.

Store at room temperature.

SECTION 8. Exposure controls/personal protection

**Exposure limit(s)**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Basis</th>
<th>Value</th>
<th>Threshold limits</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>dichloromethane 75-09-2</td>
<td>ACGIH Time Weighted Average (TWA):</td>
<td>50 ppm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Engineering measures**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

**Individual protection measures**

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

**Hygiene measures**

Immediately change contaminated clothing. Apply skin-protective barrier cream. Wash hands and face after working with substance.

**Eye/face protection**

Safety glasses

**Hand protection**

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.

**Other protective equipment:**

Protective clothing

**Respiratory protection**

required when vapors/aerosols are generated. 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.

SECTION 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Physical state</th>
<th>liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>sweet</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>24.9 - 611.7 ppm</td>
</tr>
<tr>
<td>Property</td>
<td>Value</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>pH</td>
<td>neutral at 68 °F (20 °C)</td>
</tr>
<tr>
<td>Melting point</td>
<td>-95 °C</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>104 °F (40 °C) at 1,013 hPa</td>
</tr>
<tr>
<td>Flash point</td>
<td>does not flash</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>1.9</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>13 %(V)</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>22 %(V)</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>475 hPa at 68 °F (20 °C)</td>
</tr>
<tr>
<td>Relative vapor density</td>
<td>2.93</td>
</tr>
<tr>
<td>Density</td>
<td>1.33 g/cm³ at 68 °F (20 °C)</td>
</tr>
<tr>
<td>Relative density</td>
<td>No information available.</td>
</tr>
<tr>
<td>Water solubility</td>
<td>20 g/l at 68 °F (20 °C)</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>log Pow: 1.25 (experimental)</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No information available.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>&gt; 248 °F (&gt; 120 °C)</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>0.43 mPa.s at 68 °F (20 °C)</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not classified as explosive.</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>none</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>1121 °F (605 °C) DIN 51794</td>
</tr>
</tbody>
</table>
SECTION 10. Stability and reactivity

Reactivity
See below

Chemical stability
Sensitivity to light

Stabilizer
2-methyl-2-butene

Possibility of hazardous reactions
Risk of explosion with:
Alkali metals, nitrogen oxides, nitrogen dioxide, Potassium, sodium azide, perchloric acid, Nitric acid, aluminum chloride, Amines, Oxygen, (as liquefied gas), powdered aluminum, sodium aromatic hydrocarbons, with powdered aluminum
Exothermic reaction with:
Alkaline earth metals, Powdered metals, amides, alcoholates, nonmetallic oxides, potassium tert-butanolate, sodium amide

Conditions to avoid
no information available

Incompatible materials
rubber, various plastics, Light metals, Metals, Mild steel

Hazardous decomposition products
in the event of fire: See section 5.

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure
Inhalation, Eye contact, Skin contact

Target Organs
Eyes
Skin
cardiovascular system
Central nervous system

Acute oral toxicity
LDLO human: 357 mg/kg (RTECS)

Symptoms: Nausea, Vomiting, Risk of aspiration upon vomiting., Aspiration may cause pulmonary edema and pneumonitis.
absorption
Acute inhalation toxicity
LC50 Rat: 88 mg/l; 30 min (IUCLID)

Symptoms: mucosal irritations

Acute dermal toxicity
LD50 Rat: > 2,000 mg/kg
OECD Test Guideline 402

Skin irritation
Rabbit
Result: Irritations
(IUCLID)

Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product.

Eye irritation
Rabbit
Result: slight irritation
(IUCLID)

Risk of corneal clouding.

Sensitization
Patch test:
Result: negative
(IUCLID)

Genotoxicity in vitro
Mutagenicity (mammal cell test): chromosome aberration.
Result: negative
(National Toxicology Program)

Ames test
Salmonella typhimurium
Result: positive
Method: OECD Test Guideline 471

CMR effects
Carcinogenicity:
Suspected of causing cancer.

Specific target organ systemic toxicity - single exposure
The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard
Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity
IARC
Group 2B: Possibly carcinogenic to humans
dichloromethane 75-09-2

OSHA
dichloromethane 75-09-2
Further information
Swallowing may result in damage to the following:
Liver, Kidney
Systemic effects:
After absorption of large quantities:
CNS disorders, Drowsiness, Dizziness, drop in blood pressure, Cardiac irregularities, depressed respiration, inebriation, Unconsciousness, narcosis, respiratory paralysis
The following applies to aliphatic halogenated hydrocarbons in general: systemic effect: narcosis, cardiovascular disorders. Toxic effect on liver, kidneys.
Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information
Ecotoxicity
Toxicity to fish
LC50 Pimephales promelas (fathead minnow): 193 mg/l; 96 h (ECOTOX Database)
Toxicity to daphnia and other aquatic invertebrates
EC0 Protozoa: > 16,000 mg/l(Lit.)
EC50 Daphnia magna (Water flea): 1,682 mg/l; 48 h
DIN 38412
Toxicity to algae
IC50 Pseudokirchneriella subcapitata (green algae): > 660 mg/l; 96 h (IUCLID)
Toxicity to bacteria
EC50 Photobacterium phosphoreum: 2.88 mg/l; 15 min (IUCLID)

Persistence and degradability
Biodegradability
5 - 26 %; 28 d
OECD Test Guideline 301C
After adaption biodegradable.
Not readily biodegradable.

Bioaccumulative potential
Partition coefficient: n-octanol/water
log Pow: 1.25
(experimental)
(Lit.) Bioaccumulation is not expected.

Mobility in soil
Distribution among environmental compartments
Adsorption/Soil
log Koc: 1.00
(experimental)
Mobile in soils (Lit.)
Other adverse effects

*Henry constant*
329 Pa·m³/mol
Method: (experimental)
(Lit.) Distribution preferentially in air.

*Additional ecological information*
Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

The information presented 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. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

**Land transport (DOT)**
- UN number: UN 1593
- Proper shipping name: DICHLOROMETHANE
- Class: 6.1
- Packing group: III
- Environmentally hazardous: --

**Air transport (IATA)**
- UN number: UN 1593
- Proper shipping name: DICHLOROMETHANE
- Class: 6.1
- Packing group: III
- Environmentally hazardous: --
- Special precautions for user: no

**Sea transport (IMDG)**
- UN number: UN 1593
- Proper shipping name: DICHLOROMETHANE
- Class: 6.1
- Packing group: III
- Environmentally hazardous: --
- Special precautions for user: yes
- EmS: F-A S-A

SECTION 15. Regulatory information

United States of America
- SARA 313
The following components are subject to reporting levels established by SARA Title III, Section 313:

Ingredients

- dichlormethane 75-09-2 99.998%

SARA 302
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Clean Water Act
This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

DEA List I
Not listed

DEA List II
Not listed

US State Regulations

Massachusetts Right To Know
Ingredients
dichlormethane

Pennsylvania Right To Know
Ingredients
dichlormethane

New Jersey Right To Know
Ingredients
dichlormethane

California Prop 65 Components
WARNING: this product contains a chemical known in the State of California to cause cancer.
Ingredients
dichlormethane

Notification status
TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL.

KOREA: Not in compliance with the inventory

SECTION 16. Other information

Training advice
Provide adequate information, instruction and training for operators.
<table>
<thead>
<tr>
<th>Labeling</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hazard pictograms</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Signal Word**
Warning

**Hazard Statements**
H351 Suspected of causing cancer.

**Precautionary Statements**
Response
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

**Full text of H-Statements referred to under sections 2 and 3.**
H351 Suspected of causing cancer.

**Key or legend to abbreviations and acronyms used in the safety data sheet**
Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date 02/02/2015

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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