SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name : Dichloromethane
Product Number : 320269
Brand : SIGALD
Index-No. : 602-004-00-3
CAS-No. : 75-09-2

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

Identified uses : Laboratory chemicals, Synthesis of substances
Uses advised against : This chemical/product is not and cannot be distributed in commerce (as defined in TSCA section 3(5)) or processed (as defined in TSCA section 3(13)) for consumer paint or coating removal.

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES
Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone

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

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

- Skin irritation (Category 2), H315
- Eye irritation (Category 2A), H319
- Carcinogenicity (Category 2), H351
- Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336

For the full text of the H-Statements mentioned in this Section, see Section 16.
2.2 GHS Label elements, including precautionary statements

Pictogram

Signal Word: Warning

Hazard statement(s)
- H315: Causes skin irritation.
- H319: Causes serious eye irritation.
- H336: May cause drowsiness or dizziness.
- H351: Suspected of causing cancer.

Precautionary statement(s)
- P201: Obtain special instructions before use.
- P202: Do not handle until all safety precautions have been read and understood.
- P261: Avoid breathing mist or vapors.
- P264: Wash skin thoroughly after handling.
- P271: Use only outdoors or in a well-ventilated area.
- P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
- P304 + P340 + P312: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
- P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308 + P313: IF exposed or concerned: Get medical advice/ attention.
- P332 + P313: If skin irritation occurs: Get medical advice/ attention.
- P337 + P313: If eye irritation persists: Get medical advice/ attention.
- P362: Take off contaminated clothing and wash before reuse.
- P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
- P405: Store locked up.
- P501: Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms: Methylene chloride

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dichloromethane</td>
<td>Skin Irrit. 2; Eye Irrit. 2A</td>
<td>&lt;= 100 %</td>
</tr>
</tbody>
</table>
For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice
Show this material safety data sheet to the doctor in attendance.

If inhaled
After inhalation: fresh air. Call in physician.

In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Consult a physician.

In case of eye contact
After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

If swallowed
After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water Foam Carbon dioxide (CO2) Dry powder

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

5.2 Special hazards arising from the substance or mixture
Carbon oxides
Hydrogen chloride gas
Combustible.
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.
5.4 **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**

6.1 **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. For personal protection see section 8.

6.2 **Environmental precautions**  
Do not let product enter drains.

6.3 **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.

6.4 **Reference to other sections**  
For disposal see section 13.

---

**SECTION 7: Handling and storage**

7.1 **Precautions for safe handling**  
**Advice on safe handling**  
Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

**Hygiene measures**  
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.

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

Heat sensitive.

**Storage class**  
Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 **Specific end use(s)**  
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.
### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

**Ingredients with workplace control parameters**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dichloromethane</td>
<td>75-09-2</td>
<td>TWA</td>
<td>50 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Remarks: Confirmed animal carcinogen with unknown relevance to humans</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Potential Occupational Carcinogen</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PEL 25 ppm OSHA Specifically Regulated Chemicals/Carcinogens</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>OSHA specifically regulated carcinogen</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>STEL 125 ppm OSHA Specifically Regulated Chemicals/Carcinogens</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OSHA specifically regulated carcinogen</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Remarks: California permissible exposure limits for chemical</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>contaminants (Title 8, Article 107)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Remarks: Derived No Effect Level (DNEL)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Application Area: Workers, Consumers</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Routes of exposure: Inhalation, Ingestion, Skin contact</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Health effect: Acute, Long-term systemic effects</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Value: 706 mg/m³, 353 mg/m³, 4750 mg/kg BW/d, 0.06 mg/kg BW/d,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>88.3 mg/m³, 2395 mg/kg BW/d, 353 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Predicted No Effect Concentration (PNEC)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Compartment: Soil, Sea water, Fresh water</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Value: 0.583 mg/kg, 0.194 mg/l, 0.54 mg/l</td>
</tr>
</tbody>
</table>

**Biological occupational exposure limits**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Parameters</th>
<th>Value</th>
<th>Biological specimen</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dichloromethane</td>
<td>75-09-2</td>
<td>Dichloromethane</td>
<td>0.3 mg/l</td>
<td>Urine</td>
<td>ACGIH - Biological Exposure Indices (BEI)</td>
</tr>
</tbody>
</table>

Remarks: End of shift (As soon as possible after exposure ceases)
Sea sediment | 1.61 mg/kg
--- | ---
Fresh water sediment | 4.47 mg/kg
Onsite sewage treatment plant | 26 mg/l
Aquatic intermittent release | 0.27 mg/l

8.2 Exposure controls

**Appropriate engineering controls**
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

**Personal protective equipment**

**Eye/face protection**
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

**Skin protection**
This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).
Splash contact
Material: Viton®
Minimum layer thickness: 0.7 mm
Break through time: 120 min
Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

**Body Protection**
protective clothing

**Respiratory protection**
required when vapours/aerosols are generated.

**Control of environmental exposure**
Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| a) Appearance | Form: liquid  
Color: colorless |
| b) Odor | ether-like |
| c) Odor Threshold | 250 ppm |
| d) pH | No data available |
| e) Melting point/freezing point | Melting point: -95 °C (-139 °F) at 1,013 hPa |
| f) Initial boiling point and boiling range | 39.8 - 40 °C 103.6 - 104 °F - lit. |
| g) Flash point | ()does not flash |
| h) Evaporation rate | 0.71 |
i) Flammability (solid, gas)  No data available
j) Upper/lower flammability or explosive limits  
   Upper explosion limit: 22 %\(\text{V}\)  
   Lower explosion limit: 13 %\(\text{V}\)
k) Vapor pressure  584 hPa at 25 °C (77 °F)
l) Vapor density  2.93
m) Density  1.325 g/mL at 25 °C (77 °F) - lit.  
   Relative density  No data available
n) Water solubility  13.2 g/l at 25 °C (77 °F)
o) Partition coefficient: n-octanol/water log Pow: 1.25 at 20 °C (68 °F) - Bioaccumulation is not expected.
p) Autoignition temperature  605 °C (1121 °F) at 1,013 hPa - DIN 51794
q) Decomposition temperature  No data available
r) Viscosity  No data available
s) Explosive properties  No data available
t) Oxidizing properties  none

9.2 Other safety information

Relative vapor density  2.93

SECTION 10: Stability and reactivity

10.1 Reactivity  
No data available

10.2 Chemical stability  
Sensitivity to light  
The product is chemically stable under standard ambient conditions (room temperature).  
Contains the following stabilizer(s):  
2-methyl-2-butene (0.005 %)

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

10.4 Conditions to avoid
no information available

10.5 Incompatible materials
No data available

10.6 Hazardous decomposition products
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
Acute toxicity estimate Oral - 2,500 mg/kg
(Calculation method)
LD50 Oral - Rat - male and female - > 2,000 mg/kg
(OECD Test Guideline 401)
LC50 Inhalation - Mouse - 4 h - 86 mg/l - vapor

Remarks: (ECHA)
Symptoms: Possible damages:, mucosal irritations
Acute toxicity estimate Dermal - 2,500 mg/kg
(Calculation method)
LD50 Dermal - Rat - male and female - > 2,000 mg/kg
(OECD Test Guideline 402)

Skin corrosion/irritation
Skin - Rabbit
Result: Irritations - 4 h
(OECD Test Guideline 404)
Remarks: Repeated or prolonged exposure may cause skin irritation and dermatitis, due to
degreasing properties of the product.
**Serious eye damage/eye irritation**

Eyes - Rabbit  
Result: Eye irritation  
Remarks: (ECHA)  
Remarks: Risk of corneal clouding.

**Respiratory or skin sensitization**

Local lymph node assay (LLNA) - Mouse  
Result: negative  
(OECD Test Guideline 429)

**Germ cell mutagenicity**

Test Type: Mutagenicity (mammal cell test): chromosome aberration.  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 473  
Result: positive  
Test Type: Ames test  
Test system: Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: positive

Test Type: In vivo micronucleus test  
Species: Mouse  
Cell type: Bone marrow  
Application Route: Gavage  
Method: OECD Test Guideline 474  
Result: negative

**Carcinogenicity**

Suspected of causing cancer.  
IARC: 2A - Group 2A: Probably carcinogenic to humans (Dichloromethane)  
NTP: RAHC - Reasonably anticipated to be a human carcinogen (Dichloromethane)  
OSHA: OSHA specifically regulated carcinogen (Dichloromethane)

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

Inhalation - May cause drowsiness or dizziness. - Central nervous system

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

11.2 **Additional Information**

Repeated dose toxicity - Rat - male and female - Oral - 104 Weeks - NOAEL (No observed adverse effect level) - 6 mg/kg

Repeated dose toxicity - Rat - male and female - Inhalation - 104 Weeks
RTECS: PA8050000
Dizziness, Nausea, Vomiting, narcosis, Cough, irritant effects, Unconsciousness, Shortness of breath, respiratory paralysis, somnolence, depressed respiration, CNS disorders, inebriation
Risk of corneal clouding.
The following applies to aliphatic halogenated hydrocarbons in general: systemic effect: narcosis, cardiovascular disorders. Toxic effect on liver, kidneys.
Dichloromethane is metabolized in the body producing carbon monoxide which increases and sustains carboxyhemoglobin levels in the blood, reducing the oxygen-carrying capacity of the blood.
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Systemic effects:

After absorption of large quantities:

CNS disorders
Drowsiness
Dizziness
drop in blood pressure
Cardiac irregularities
depressed respiration
inebriation
Unconsciousness
narcosis

Swallowing may result in damage to the following:

Liver
Kidney

The following applies to aliphatic halogenated hydrocarbons in general: systemic effect: narcosis, cardiovascular disorders. Toxic effect on liver, kidneys.

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish flow-through test LC50 - Pimephales promelas (fathead minnow) - 193.00 mg/l - 96 h
Remarks: (ECHA)
Toxicity to daphnia and other aquatic invertebrates static test LC50 - Daphnia magna (Water flea) - 27 mg/l - 48 h (US-EPA)

Toxicity to bacteria static test EC50 - activated sludge - 2,590 mg/l - 40 min (OECD Test Guideline 209)

Toxicity to fish (Chronic toxicity) flow-through test LC50 - Pimephales promelas (fathead minnow) - 471 mg/l - 8 d

Remarks: (ECHA)

12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 28 d
Result: 68 % - Readily biodegradable. (OECD Test Guideline 301D)

12.3 Bioaccumulative potential

Bioaccumulation Cyprinus carpio (Carp) - 6 Weeks - 250 µg/l(Dichloromethane)

Bioconcentration factor (BCF): 2 - 5.4 (OECD Test Guideline 305)

Cyprinus carpio (Carp) - 6 Weeks - 25 µg/l(Dichloromethane)

Bioconcentration factor (BCF): 6 - 40 (OECD Test Guideline 305)

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties
No data available

12.7 Other adverse effects
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.
SECTION 14: Transport information

**DOT (US)**
- UN number: 1593
- Class: 6.1
- Packing group: III
- Proper shipping name: Dichloromethane
- Reportable Quantity (RQ): 1000 lbs
- Poison Inhalation Hazard: No

**IMDG**
- UN number: 1593
- Class: 6.1
- Packing group: III
- EMS-No: F-A, S-A

**IATA**
- UN number: 1593
- Class: 6.1
- Packing group: III
- Proper shipping name: Dichloromethane

SECTION 15: Regulatory information

**US TSCA Section 3**
This chemical/product is not and cannot be distributed in commerce (as defined in TSCA section 3(5)) or processed (as defined in TSCA section 3(13)) for consumer paint or coating removal.

**SARA 302 Components**
This material does not contain any components with a section 302 EHS TPQ.

**SARA 313 Components**
The following components are subject to reporting levels established by SARA Title III, Section 313:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dichloromethane</td>
<td>75-09-2</td>
<td>2007-07-01</td>
</tr>
</tbody>
</table>

**SARA 311/312 Hazards**
Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dichloromethane</td>
<td>75-09-2</td>
<td>2007-07-01</td>
</tr>
</tbody>
</table>

**Pennsylvania Right To Know Components**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dichloromethane</td>
<td>75-09-2</td>
<td>2007-07-01</td>
</tr>
</tbody>
</table>

**California Prop. 65 Components**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dichloromethane</td>
<td>75-09-2</td>
<td>2007-09-28</td>
</tr>
</tbody>
</table>

www.P65Warnings.ca.gov.Dichloromethane
Other regulations
This chemical/product is not and cannot be distributed in commerce (as defined in TSCA section 3(5)) or processed (as defined in TSCA section 3(13)) for consumer paint or coating removal.

SECTION 16: Other information

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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Version: 6.11  Revision Date: 05/24/2023  Print Date: 07/15/2023