

# SAFETY DATA SHEET

Version 6.10  
Revision Date 08/05/2024  
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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : Methylene Chloride

Product Number : PHR1557  
Brand : Sigma-Aldrich  
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. The product is being supplied under the TSCA R&D Exemption (40 CFR Section 720.36). It is the recipient's responsibility to comply with the requirements of the R&D exemption. The product may not be used for a non-exempt commercial purpose under TSCA unless appropriate consent is granted in writing by MilliporeSigma.

### 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

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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 Statements

H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H336 May cause drowsiness or dizziness.  
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.  
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

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### SECTION 3: Composition/information on ingredients

#### 3.1 Substances

Formula : CH<sub>2</sub>Cl<sub>2</sub>  
Molecular weight : 84.93 g/mol  
CAS-No. : 75-09-2  
EC-No. : 200-838-9  
Index-No. : 602-004-00-3

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The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the US and Canada

Component	Classification	Concentration
<b>Dichloromethane</b>		
	Skin Irrit. 2; Eye Irrit. 2A; Carc. 2; STOT SE 3; H315, H319, H351, H336 Concentration limits: 20 %: STOT SE 3, H336;	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

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## 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

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## 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.

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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.

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## **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.

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## **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.

Store at Room Temperature.

#### **Storage class**

Storage class (TRGS 510): 6.1C: Combustible, acute toxic Cat.3 / toxic compounds or compounds which 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

Component	CAS-No.	Value	Control parameters	Basis
Dichloromethane	75-09-2	TWA	50 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Confirmed animal carcinogen with unknown relevance to humans		
		Potential Occupational Carcinogen		
		PEL	25 ppm	OSHA Specifically Regulated Chemicals/Carcinogens
		OSHA specifically regulated carcinogen		
		STEL	125 ppm	OSHA Specifically Regulated Chemicals/Carcinogens
		OSHA specifically regulated carcinogen		
		PEL	25 ppm 87 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		STEL	125 ppm 435 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

#### Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Dichloromethane	75-09-2	Dichloromethane	0.3 mg/l	Urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift (As soon as possible after exposure ceases)			

#### Derived No Effect Level (DNEL)

Application Area	Routes of exposure	Health effect	Value
Workers	Inhalation	Acute systemic effects	706 mg/m <sup>3</sup>
Workers	Inhalation	Long-term systemic effects	353 mg/m <sup>3</sup>
Workers	Skin contact	Long-term systemic effects	4750mg/kg BW/d
Consumers	Ingestion	Long-term systemic effects	0.06mg/kg BW/d
Consumers	Inhalation	Long-term systemic effects	88.3 mg/m <sup>3</sup>
Consumers	Skin contact	Long-term systemic effects	2395mg/kg BW/d
Consumers	Inhalation	Acute systemic effects	353 mg/m <sup>3</sup>

## Predicted No Effect Concentration (PNEC)

Compartment	Value
Soil	0.583 mg/kg
Sea water	0.194 mg/l
Fresh water	0.54 mg/l
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 EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://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

Recommended Filter type: Filter AX (EN 371)

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

required when vapours/aerosols are generated.

#### Control of environmental exposure

Do not let product enter drains.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- 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	40 °C 104 °F at 1,013 hPa
g) Flash point	( )No data available
h) Evaporation rate	0.71
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	Upper explosion limit: 22 %(V) Lower explosion limit: 13 %(V)
k) Vapor pressure	584 hPa at 25 °C (77 °F)
l) Vapor density	2.93
m) Density	1.33 g/cm <sup>3</sup> at 20 °C (68 °F)
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
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## 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) .

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### 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

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

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



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

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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

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## 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)
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### 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)
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### 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

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**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.

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**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  
Proper shipping name: DICHLOROMETHANE

**IATA**

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

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**SECTION 15: Regulatory information****CERCLA Reportable Quantity**

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Dichloromethane	75-09-2	1000	1000

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

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

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

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

Dichloromethane 75-09-2 >= 90 - <= 100 %

### **US State Regulations**

#### **Massachusetts Right To Know**

Dichloromethane 75-09-2

#### **Pennsylvania Right To Know**

Dichloromethane 75-09-2

#### **Maine Chemicals of High Concern**

Product does not contain any listed chemicals

#### **Vermont Chemicals of High Concern**

Dichloromethane 75-09-2

#### **Washington Chemicals of High Concern**

Dichloromethane 75-09-2

#### **California Prop. 65**

WARNING: This product can expose you to chemicals including Dichloromethane, which is/are known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

#### **The ingredients of this product are reported in the following inventories:**

TSCA : All substances listed as active on the TSCA inventory

#### **TSCA list**

No substances are subject to a Significant New Use Rule.

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.

The following substance(s) is/are subject to TSCA 12(b) export notification requirements:  
Dichloromethane 75-09-2

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## **SECTION 16: Other information**

### **Further information**

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. 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](http://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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