SAFETY DATA SHEET

Version 5.6 Revision Date 05/12/2014 Print Date 12/17/2014

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Dichloromethane

Product Number : D65100
Brand : Sigma-Aldrich
Index-No. : 602-004-00-3

REACH No. : 01-2119480404-41-XXXX

CAS-No. : 75-09-2

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

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich

3050 Spruce Street SAINT LOUIS MO 63103

USA

Telephone : +1 800-325-5832 Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

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), Respiratory system, Central nervous system, H335, H336

Specific target organ toxicity - repeated exposure, Oral (Category 2), Liver, Blood, H373

Specific target organ toxicity - repeated exposure, Inhalation (Category 2), Central nervous system, H373

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.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.

H351 Suspected of causing cancer.

H373 May cause damage to organs (Liver, Blood) through prolonged or

repeated exposure if swallowed.

H373 May cause damage to organs (Central nervous system) through

prolonged or repeated exposure if inhaled.

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Precautionary statement(s)

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and

understood.

P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

P264 Wash skin thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/ eye protection/ face protection. P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position

comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove

> contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/ attention.

Specific treatment (see supplemental first aid instructions on this label). P321

If skin irritation occurs: Get medical advice/ attention. P332 + P313 If eve irritation persists: Get medical advice/ attention. P337 + P313 Take off contaminated clothing and wash before reuse. P362 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

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 **Substances**

P308 + P313

Synonyms Methylene chloride

Formula CH₂Cl₂ Molecular Weight 84.93 g/mol CAS-No. 75-09-2 EC-No. 200-838-9 Index-No. 602-004-00-3

01-2119480404-41-XXXX Registration number

Hazardous components

Component	Classification	Concentration
Methylene chloride		
· ·	Skin Irrit. 2; Eye Irrit. 2A; Carc.	90 - 100 %
	2; STOT SE 3; STOT RE 2;	
	H315, H319, H335, H336,	
	H351, H373, H373	

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

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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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

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides, Hydrogen chloride gas

5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information

no data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Heat sensitive. Store under inert gas.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control	Basis
			parameters	
	Remarks	Potential Occupational Carcinogen		
		See Appendix A		
Methylene chloride	75-09-2	TWA	50 ppm	USA. ACGIH Threshold Limit Values
				(TLV)
		Central Nervous System impairment		
		Carboxyhemoglobinemia		
		Substances for which there is a Biological Exposure Index or Indices		

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(see BEI® section)			
Confirmed animal carcinogen with unknown relevance to humans			
Substance listed; for more information see OSHA document			
1910.1052			
See 1910.1052			
See Table Z-2			
PEL	25 ppm OSHA Specifically Regulated Chemicals/Carcinogens		
This section applies to all occupational exposures to methylene chloride (MC), Chemical Abstracts Service Registry Number 75-09-2, in general industry, construction and shipyard employment. Methylene chloride (MC) means an organic compound with chemical formula, CH2Cl2. Its Chemical Abstracts Service Registry Number is 75-09-2. Its molecular weight is 84.9 g/mole OSHA specifically regulated carcinogen			
STEL	125 ppm	OSHA Specifically Regulated Chemicals/Carcinogens	
This section applies to all occupational exposures to methylene chloride (MC), Chemical Abstracts Service Registry Number 75-09-2, in general industry, construction and shipyard employment. Methylene chloride (MC) means an organic compound with chemical formula, CH2Cl2. Its Chemical Abstracts Service Registry Number is 75-09-2. Its molecular weight is 84.9 g/mole OSHA specifically regulated carcinogen			

Biological occupational exposure limits

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

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Splash contact

Material: Fluorinated rubber Minimum layer thickness: 0.7 mm Break through time: 148 min

Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

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Body Protection

Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance Form: liquid

Colour: colourless

no data available b) Odour

Odour Threshold no data available

no data available d) рН

e) Melting point/freezing

point

Melting point/range: 97 °C (207 °F) - lit.

Initial boiling point and

boiling range

39.8 - 40 °C (103.6 - 104 °F) - lit.

Flash point no data available

h) Evapouration rate 0.71

Flammability (solid, gas) no data available

Upper/lower Upper explosion limit: 19 %(V) flammability or Lower explosion limit: 12 %(V)

explosive limits

Vapour pressure 470.9 hPa (353.2 mmHg) at 20.0 °C (68.0 °F)

Vapour density 2.93 - (Air = 1.0)

m) Relative density 1.325 g/mL at 25 °C (77 °F)

n) Water solubility slightly soluble Partition coefficient: nlog Pow: 1.25

octanol/water

556.1 °C (1,033.0 °F)

p) Auto-ignition temperature 662.0 °C (1,223.6 °F)

Decomposition temperature

no data available

no data available Viscosity s) Explosive properties no data available Oxidizing properties no data available

Other safety information 9.2

> 2.93 - (Air = 1.0)Relative vapour density

10. STABILITY AND REACTIVITY

Reactivity 10.1

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10.2 Chemical stability

Stable under recommended storage conditions.

Contains the following stabiliser(s):

2-Methyl-2-butene (0.005 %)

10.3 Possibility of hazardous reactions

no data available

10.4 Conditions to avoid

Heat, flames and sparks. Exposure to sunlight.

10.5 Incompatible materials

Alkali metals, Aluminum, Strong oxidizing agents, Bases, Amines, Magnesium, Strong acids and strong bases, Vinyl compounds

10.6 Hazardous decomposition products

Other decomposition products - no data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - rat - > 2,000 mg/kg

LC50 Inhalation - rat - 52,000 mg/m3

LD50 Dermal - rat - > 2,000 mg/kg

(OECD Test Guideline 402)

no data available

Skin corrosion/irritation

Skin - rabbit

Result: Irritating to skin. - 24 h

(Draize Test)

Serious eye damage/eye irritation

Eyes - rabbit

Result: Irritating to eyes. - 24 h

(Draize Test)

Respiratory or skin sensitisation

no data available

Germ cell mutagenicity

rat

DNA damage

Carcinogenicity

Carcinogenicity - rat - Inhalation

Tumorigenic:Carcinogenic by RTECS criteria. Endocrine:Tumors.

Limited evidence of carcinogenicity in animal studies

Suspected human carcinogens

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Methylene chloride)

NTP: Reasonably anticipated to be a human carcinogen (Methylene chloride)

OSHA: OSHA specifically regulated carcinogen (Methylene chloride)

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure

May cause respiratory irritation.

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May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure

Inhalation - May cause damage to organs through prolonged or repeated exposure. - Central nervous system Oral - May cause damage to organs through prolonged or repeated exposure. - Liver, Blood

Aspiration hazard

no data available

Additional Information

RTECS: PA8050000

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. Acts as a simple asphyxiant by displacing air., anesthetic effects, Difficulty in breathing, Headache, Dizziness, Prolonged or repeated contact with skin may cause:, defatting, Dermatitis, Contact with eyes can cause:, Redness, Blurred vision, Provokes tears.. Effects due to ingestion may include: Gastrointestinal discomfort. Central nervous system depression. Paresthesia., Drowsiness, Convulsions, Conjunctivitis., Pulmonary edema, Effects may be delayed., Irregular breathing., Stomach/intestinal disorders, Nausea, Vomiting, Increased liver enzymes., Weakness, Heavy or prolonged skin exposure may result in the absorption of harmful amounts of material.. Abdominal pain

Stomach - Irregularities - Based on Human Evidence Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 193.00 mg/l - 96 h

NOEC - Cyprinodon variegatus (sheepshead minnow) - 130 mg/l - 96 h

Toxicity to daphnia and

EC50 - Daphnia magna (Water flea) - 1,682.00 mg/l - 48 h

other aquatic invertebrates

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

13. DISPOSAL CONSIDERATIONS

Waste treatment methods 13.1

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

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

Reportable Quantity (RQ): 1000 lbs

Marine pollutant: No

Sigma-Aldrich - D65100 Page 7 of 9 Poison Inhalation Hazard: No

IMDG

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

Proper shipping name: DICHLOROMETHANE

Marine pollutant: No

IATA

UN number: 1593 Class: 6.1 Packing group: III

Proper shipping name: Dichloromethane

15. REGULATORY INFORMATION

REACH No. : 01-2119480404-41-XXXX

SARA 302 Components

SARA 302: No chemicals in this material are subject to the 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:

CAS-No. Revision Date

Methylene chloride 75-09-2 2007-07-01

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

Methylene chloride CAS-No. Revision Date 75-09-2 2007-07-01

Pennsylvania Right To Know Components

Methylene chloride CAS-No. Revision Date 75-09-2 2007-07-01

New Jersey Right To Know Components

Methylene chloride CAS-No. Revision Date 75-09-2 2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer. CAS-No. Revision Date 2007-09-28

Methylene chloride

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Carc. Carcinogenicity
Eye Irrit. Eye irritation

H315 Causes skin irritation.

H319 Causes serious eye irritation.
 H335 May cause respiratory irritation.
 H336 May cause drowsiness or dizziness.
 H351 Suspected of causing cancer.

H373 May cause damage to organs through prolonged or repeated exposure if swallowed.

Skin Irrit. Skin irritation

STOT RE Specific target organ toxicity - repeated exposure STOT SE Specific target organ toxicity - single exposure

HMIS Rating

Health hazard: 2
Chronic Health Hazard: *
Flammability: 0
Physical Hazard 0

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NFPA Rating

Health hazard: 2
Fire Hazard: 0
Reactivity Hazard: 0

Further information

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Preparation Information

Sigma-Aldrich Corporation Product Safety – Americas Region 1-800-521-8956

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