

SAFETY DATA SHEET

According to Directive 2001/58/EC

METHYLENE CHLORIDE - (A4/A20/A50)

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1. Identification of the substance/preparation

Product name : METHYLENE CHLORIDE - (A4/A20/A50)
Chemical Name : Dichloromethane
Molecular formula : CH₂Cl₂
Molecular Weight : 84,9 g/mol

1.2. Use of the Substance/Preparation

Recommended use : - Chemical intermediate
- Solvent

1.3. Company/Undertaking Identification

Address : SOLVAY CHEMICALS INTERNATIONAL SA
RUE DU PRINCE ALBERT, 44
B- 1050 BRUXELLES

Telephone : +3225096111

Telefax : +3225096624

1.4. Emergency and contact telephone numbers

Emergency telephone number : +44(0)208 762 8322 [CareChem 24] (Europe)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Dichloromethane

CAS-No. : 75-09-2
Annex-1 : 602-004-00-3
EINECS-No. : 200-838-9
Symbol(s) : Xn
R-phras(e)s : R40
Concentration : > 99,00 %

3. HAZARDS IDENTIFICATION

Appearance : liquid
Colour : colourless
Odour : Chloroform

- The product is classified in accordance with Annex I to Directive 67/548/EEC.
- Limited evidence of a carcinogenic effect.
- Hazardous decomposition products formed under fire conditions.



4. FIRST AID MEASURES

4.1. Inhalation

- In case of accident by inhalation: remove casualty to fresh air and keep at rest.
- Victim to lie down in the recovery position, cover and keep him warm.
- Oxygen or artificial respiration if needed.
- If symptoms persist, call a physician.

4.2. Eye contact

- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- In the case of difficulty of opening the lids, administer an analgesic eye wash (oxybuprocaine).
- Immediate medical attention is required.

4.3. Skin contact

- Remove and wash contaminated clothing before re-use.
- Wash off with soap and water.
- If symptoms persist, call a physician.

4.4. Ingestion

The following actions are recommended :

- Consult a physician.
- Take victim immediately to hospital.

If victim is conscious:

- If swallowed, rinse mouth with water (only if the person is conscious).
- Do NOT induce vomiting.
- Do not give anything to drink.
- Artificial respiration and/or oxygen may be necessary.

If victim is unconscious but breathing:

- Artificial respiration and/or oxygen may be necessary.

5. FIRE-FIGHTING MEASURES

5.1. Suitable extinguishing media

- powder
- Foam, AFFF
- Carbon dioxide (CO₂)
- Water
- Water spray

5.2. Extinguishing media which must not be used for safety reasons

- None.

5.3. Special exposure hazards in a fire

- does not flash
- In use, may form flammable/explosive vapour-air mixture.
- Vapours are heavier than air and may spread along floors.
- Risk of ignition.
- Hazardous decomposition products formed under fire conditions.

5.4. Special protective equipment for fire-fighters

- Evacuate personnel to safe areas.
- Wear self-contained breathing apparatus and protective suit.
- Fire fighters must wear fire resistant personnel protective equipment.
- Clean contaminated surface thoroughly.

5.5. Other information

- Cool containers / tanks with water spray.
- Flood the product with water.



6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions

- Prevent further leakage or spillage if safe to do so.
- Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.
- Wear self-contained breathing apparatus in confined spaces, in cases where the oxygen level is depleted, or in case of significant emissions.
- Keep away from open flames, hot surfaces and sources of ignition.
- Cover the spreading liquid with foam in order to slow down the evaporation.
- Keep away from Incompatible products.
- Ventilate the area.
- Refer to protective measures listed in sections 7 and 8.

6.2. Environmental precautions

- Should not be released into the environment.
- If the product contaminates rivers and lakes or drains inform respective authorities.

6.3. Methods for cleaning up

- Dam up.
- Soak up with inert absorbent material.
- Prevent product from entering drains.
- Keep in properly labelled containers.
- Keep in suitable, closed containers for disposal.
- Treat recovered material as described in the section "Disposal considerations".

7. HANDLING AND STORAGE

7.1. Handling

- Use in closed system.
- Handle small quantities under a lab hood.
- Keep away from heat and sources of ignition.
- Prevent product vapours decomposition from contacting hot spots.
- Prevent product vapours decomposition from electric arc action (welding).
- Preferably transfer by pump or gravity.
- Use only equipment and materials which are compatible with the product.
- Keep away from incompatible products

7.2. Storage

- To maintain product quality, do not store in heat or direct sunlight.
- Store in original container.
- Keep container closed.
- Keep in a cool, well-ventilated place.
- Keep in a bunded area.

7.3. Specific use(s)

- For further information, please contact: Supplier

7.4. Packaging material

- Stainless steel
- Steel drum
- glass

7.5. Other information

- Keep away from fire, sparks and heated surfaces.
- To avoid thermal decomposition, do not overheat.
- Refer to protective measures listed in sections 7 and 8.



8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Exposure Limit Values

Dichloromethane

- US. ACGIH Threshold Limit Values 2006
TWA = 50 ppm
- OEL (Cyprus) 1986
TWA = 100 ppm
TWA = 360 mg/m³

8.2. Exposure controls

- Ensure adequate ventilation.
- Provide appropriate exhaust ventilation at machinery.
- Refer to protective measures listed in sections 7 and 8.
- Apply technical measures to comply with the occupational exposure limits.

8.2.1. Occupational exposure controls

8.2.1.1. Respiratory protection

- Self-contained breathing apparatus in medium confinement/insufficient oxygen/in case of large uncontrolled emissions/in all circumstances when the mask and cartridge do not give adequate protection.
- Use only respiratory protection that conforms to international/ national standards.
- Recommended Filter type:
- AX

8.2.1.2. Hand protection

- Wear suitable gloves.
- Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).
- Suitable material : PVA
- Unsuitable material : Natural Rubber, PVC

8.2.1.3. Eye protection

- Chemical resistant goggles must be worn.
- If splashes are likely to occur, wear:
- Goggles
- Face-shield

8.2.1.4. Skin and body protection

- Protective suit
- Neoprene
- Apron
- Boots

8.2.1.5. Hygiene measures

- Use only in an area equipped with a safety shower.
- Eye wash bottle with pure water
- When using do not eat, drink or smoke.
- High standards of skin care and personal hygiene should be exercised at all times.
- Handle in accordance with good industrial hygiene and safety practice.

8.2.2. Environmental exposure controls

- Dispose of rinse water in accordance with local and national regulations.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General Information (appearance, odour)



Appearance : liquid
Colour : colourless
Odour : Chloroform

9.2. Important health safety and environmental information

pH : *Remarks:* not applicable
Boiling point/range : 40 °C
Flash point : *Remarks:* none
Method: closed cup
Flammability : Upper explosion limit:
22 %(V)
Lower explosion limit:
13 %(V)
Explosive properties : Explosion danger:
Remarks: Vapours may form explosive mixture with air.
Oxidizing properties : *Remarks:* not applicable
Vapour pressure : 465 hPa
Temperature: 20 °C
Relative density / Density : 1,33
Solubility : Water
20 g/l
Temperature: 20 °C
: Soluble in:
: organic solvent
: Greases
Partition coefficient (n-octanol/water) : log Pow:
1,25
Vapour density : 2,9

9.3. Other data

Freezing point: : -97 °C
Autoinflammability : 662 °C
Decomposition temperature : >= 60 °C

10. STABILITY AND REACTIVITY

10.1. Stability

- Stable under recommended storage conditions.

10.2. Conditions to avoid

- To avoid thermal decomposition, do not overheat.
- Keep away from direct sunlight.
- Exposure to moisture.



10.3. Materials to avoid

- Strong bases, Oxidizing agents, Salts of metals, Non iron metals (aluminium, magnesium, zinc, ...), Certain plastic materials

10.4. Hazardous decomposition products

- hydrochloric acid, Carbon monoxide, Phosgene

11. TOXICOLOGICAL INFORMATION

11.1 Toxicological data

Acute oral toxicity

- LD50, rat, 1.410 - 2.524 mg/kg

Acute inhalation toxicity

- LC50, 6 h, rat, 52 mg/l

Acute dermal toxicity

- LD50, rat, > 2.000 mg/kg

Skin irritation

- rabbit, Skin irritation

Eye irritation

- rabbit, Eye irritation

Sensitization

- no data available

Chronic toxicity

- Inhalation, Repeated exposure, Various species, Target Organs: Liver, Kidney, Lungs, Central nervous system, NOEL: \geq 1.000 ppm
- Oral, Repeated exposure, Target Organs: Liver, NOEL: \geq 200 mg/kg
- Inhalation, after a single exposure, cardiac sensitization following adrenergic stimulation, Remarks: High dose

Carcinogenicity

- Inhalation, Prolonged exposure, mouse, Target Organs: Liver, Lungs, carcinogenic effects

Genetic toxicity in vitro

- In vitro tests showed mutagenic effects which were not observed with in vivo test.

Toxicity to reproduction

- No toxicity to reproduction

Possible hazards (summary)

- Irritating to eyes.
- Irritating to skin.
- Liver and kidney injuries may occur.
- Risk of the central nervous system effect
- The carcinogenic effect is not demonstrated in human
- Risk of anaesthetic effect and cardiac sensitization

11.2. Health effects

Main effects

- The product causes irritation of eyes, skin and mucous membranes.
- Liver and kidney injuries may occur.
- other central nervous effects
- Use of alcoholic beverages may enhance toxic effects.

Inhalation

- slight irritation
- Upper respiratory tract
- In case of repeated or prolonged exposure: headaches, fatigue and risk of nervous system effects.



- (in case of higher concentration): Feelings of intoxication, restlessness, dizziness, nausea, vomiting, drowsiness., May cause cardiac arrhythmia., Risk of: Lung oedema, chemical pneumonitis, risk of narcosis.

Eye contact

- Severe eye irritation
- Lachrymation
- Redness
- Risk of temporary eye lesions.

Skin contact

- The product may be absorbed through the skin.
- Irritation
- Repeated exposure may cause skin dryness or cracking.
- Chronic exposure may cause dermatitis.
- Repeated or prolonged exposure: Causes burns..

Ingestion

- Irritation of the mouth and throat.
- Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
- Feelings of intoxication, restlessness, dizziness and drowsiness.
- Risk of loss of consciousness.
- Risk of chemical pneumonitis from product inhalation.
- Liver and kidney injuries may occur.

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity effects

Acute toxicity

- Fishes, various species, LC50, 96 h, from 135 - 502 mg/l
- Fishes, *Salmo gairdneri*, LOEC, 96 h, 5,5 mg/l
Remarks: fish embryos
- Crustaceans, *Daphnia magna*, EC50, 48 h, from 135 - 2.270 mg/l

Chronic toxicity

- Fishes, *Poecilia reticulata*, LC50, 14 Days, 295 mg/l
- Fishes, *Pimephales promelas*, NOEC, 8 Days, 357 mg/l
- Algae, various species, EC50, 96 h, > 662 mg/l

12.2. Mobility

- Air, Henry's law constant (H) from 200 - 400 hPa.m³/mol , 20 °C
Remarks: Very volatile.
- Water, Evaporates., t_{1/2}: < 1 - 48 h
Conditions: Concentration: 1 ppm
- Water, Evaporates., t_{1/2}: from 33 - 38 d
Conditions: Concentration: 1 ppb - 1 ppm
- Soil/sediments, log KOC:ca. 1,68
Conditions: calculated value
Remarks: significant evaporation and percolation

12.3. Persistence and degradability

Abiotic degradation

- Air, indirect photo-oxidation, t_{1/2} = 180 d
Result: non-significant photolysis
Conditions: sensitizer: OH radicals
- Water, Hydrolysis, t_{1/2} > 1,5 y
Result: non-significant hydrolysis and photolysis
- Soil
Result: non-significant hydrolysis



Biodegradation

- aerobic, Tested according to: Inherently biodegradable., Biochemical Oxygen Demand (BOD) from 5 - 26 %, 28 d
Remarks: Not readily biodegradable.
- anaerobic, t 1/2 = 11 d
Conditions: biological treatment sludge
- aerobic, Tested according to: Inherently biodegradable., 100 %, 28 d
Remarks: Inherently biodegradable.

12.4. Bioaccumulative potential

- Bioconcentration: Fishes, Cyprinus carpio, Bioconcentration factor (BCF) , 42 d, 6,4 - 40 %0,025 mg/l
- log Pow < 3
Result: Does not bioaccumulate.

12.5. Other adverse effects

- no data available

12.6. Possible hazards (summary)

- Information refers to the main component.
- . weak persistence.
- Hazard for the environment is limited due to product properties:
- . low toxicity for aquatic organisms.
- Disperses rapidly in air.
- Inherently biodegradable.
- Does not bioaccumulate.

13. DISPOSAL CONSIDERATIONS

13.1. Waste from residues / unused products

- In accordance with local and national regulations.
- Refer to manufacturer/supplier for information on recovery/recycling.
- or
- Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities.
- The incinerator must be equipped with a system for the neutralisation or recovery of HCl.

13.2. Packaging treatment

- Empty containers.
- Dispose of as unused product.
- To avoid treatments, as far as possible, use dedicated containers.
- or
- Rinse the empty containers with a low volatility hydrocarbon and treat the effluent in the same way as waste.

14. TRANSPORT INFORMATION

UN-No.

1593

IATA-DGR

Class

6.1

Packing group

III

ICAO-Labels

Toxic

Proper shipping name: DICHLOROMETHANE

IMDG



Class	6.1
Packing group	III
IMDG-Labels	toxic
HI/UN No.	1593
EmS:	F-A, S-A

Proper shipping name: DICHLOROMETHANE

ADR

Class	6.1
Packing group	III
ADR/RID-Labels	6.1
HI/UN No.	60/1593

Proper shipping name: DICHLOROMETHANE

RID

Class	6.1
Packing group	III
ADR/RID-Labels	6.1
HI/UN No.	60/1593

Proper shipping name: DICHLOROMETHANE

15. REGULATORY INFORMATION

15.1. EC Label

- Hazardous components which must be listed on the label: Dichloromethane
- Classification and labelling according to Directive 67/548/EEC.

Symbol(s)	Xn	Harmful
R-phrase(s)	R40	Limited evidence of a carcinogenic effect.
S-phrase(s)	S 2	Keep out of the reach of children.
	S23	Do not breathe vapour.
	S24/25	Avoid contact with skin and eyes.
	S36/37	Wear suitable protective clothing and gloves.

15.2. Other information

- EC Label

15.3. Inventory Information

Toxic Substance Control Act list (TSCA)	: -	In compliance with inventory.
Australian Inventory of Chemical Substances (AICS)	: -	In compliance with inventory.
Canadian Domestic Substances List (DSL)	: -	In compliance with inventory.
Korean Existing Chemicals List (ECL)	: -	In compliance with inventory.
EU list of existing chemical substances (EINECS)	: -	In compliance with inventory.
Japanese Existing and New Chemical Substances (MITI List) (ENCS)	: -	In compliance with inventory.
Inventory of Existing Chemical	: -	In compliance with inventory.



Substances (China) (IECS)	
Philippine Inventory of Chemicals and Chemical Substances (PICCS)	: - In compliance with inventory.
New Zealand Inventory (in preparation) (NZ)	: - All components on composite list considered for transfer.

15.4. Other regulations

- European Waste Catalogue, Decision (2000/532/EC), Hazardous waste, Waste codes should be assigned by the user based on the application for which the product was used., The following Waste Codes are only suggestions:
- 14 06 02 (Halogenated solvents and solvents mixes)

16. OTHER INFORMATION

16.1. Administrative information

- Update
This data sheet contains changes from the previous version in section(s): 15,16
- Distribute new edition to clients

16.2. Text of R phrases mentioned in Section 2

- R40: Limited evidence of a carcinogenic effect.

This MSDS is intended for only the selected countries to which it is applicable. For example, this MSDS is not intended for use nor distribution within North America. You should contact Solvay America company representative for the official North America MSDS.

The information given corresponds to the current state of our knowledge and experience of the product, and is not exhaustive. This applies to product which conforms to the specification, unless otherwise stated. In this case of combinations and mixtures one must make sure that no new dangers can arise. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and protection of human welfare and the environment.

