

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME Methylene chloride
COMPANY PRODUCT CODE 04301
NAME OF THE SUPPLIER Tokuyama Corporation
ADDRESS 2- 1, Kasumigaseki 3-chome, Chiyoda- ku, Tokyo 100- 8983, Japan
SECTION Chemicals Sales Department
TELEPHONE NUMBER 81- 3- 3597- 5021
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THE DATE OF ISSUE May 30, 2000
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RECOMMENDED USE OF THE CHEMICAL AND RESTRICTIONS ON USE : Industrial use

2. HAZARD IDENTIFICATION

• CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

Acute toxicity- Oral Category 4
 Skin corrosion/ irritation Category 2
 Eye Damage/ irritation Category 2A
 Carcinogenicity Category 2
 Specific target organ toxicity (Single exposure) Category 1<central nerve, respiratory organ>
 Category 3<anesthetic effect>
 Specific target organ toxicity (Repeated exposure) Category 1<central nerve, liver>
 Hazardous to the aquatic environment- Acute hazard Category 2
 Hazardous to the aquatic environment- Long- term hazard Category 2

• GHS LABEL ELEMENTS

Hazard symbol :



Signal word : Danger

Hazard statements : H302 :Harmful if swallowed, H315 :Cause skin irritation, H319 :Cause serious eye irritation, H351 :Suspected of causing cancer, H370 :Causes damage to organs<central nerve, respiratory organ>, H336 :May cause drowsiness or dizziness, H372 :Causes damage to organs<central nerve, liver> through prolonged or repeated exposure

H401 :Toxic to aquatic life,

H411 :Toxic to aquatic life with long lasting effects

Precautionary statement :

Prevention

P264 :Wash hand thoroughly after handling.

P280 :Wear protective gloves and eye/face protection. P281 :Use personal protective equipment as required.

P201 :Obtain special instructions before use. P202 :Do not handle until all safety precautions have been read and understood.

P260 :Do not breathe gas/ mist/vapours/ spray.

P270 :Do not eat, drink or smoke when using this product.

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

P273 :Avoid release to the environment.

Response

P301+ P312 :If SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.

P330 :Rinse mouth.

P302+ P352 :If ON SKIN: Wash with plenty of soap and water.

P332+ P313 :If skin irritation occurs: Get medical advice/ attention.

P362+ P364 :Take off contaminated clothing and wash it before reuse.

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

Remove contact lenses, if present and easy to do. Continue rinsing.

P337+ P313 :If eye irritation persists: Get medical advice/ attention.

P308+ P313 :If exposed or concerned: Get medical advice/ attention.

P304+ P340, P312 :If INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.

P314 :Get medical advice/ attention if you feel unwell.

P391 :Collect spillage.

STORAGE

P405 :Store locked up.

P403+ P233 :Store in a well- ventilated place. Keep container tightly closed.

DISPOSAL

P501 :Dispose of contents/container in accordance with local/ regional/ national/ international regulation.

3. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE/PREPARATION : Substance

COMMON CHEMICAL NAME OR THE GENERIC NAME : Dichloromethane,

SYNOMYS :Methylene chloride, methylene dichloride

CHEMICAL FORMULA :CH2Cl2

CAS NUMBER :75-09- 2

OFFICIAL PUBLICATION NUMBER :2)- 36 (in Japan)

TSCA REGISTRY :75-09-2

EINECS NUMBER :200-838-9

INGREDIENTS AND COMPOSITION :Greater than 99%

4 . FIRST-AID MEASURES

INFORMATION

INHALATION

Remove victim from exposure to chemical and provide fresh air immediately.

If breathing is difficult, give artificial respiration after loosening clothing and securing airway.

Keep victim warm with blanket.

Get medical attention immediately.

SKIN CONTACT

Remove contaminated clothing, shoes and socks immediately. Cut off clothing, if necessary.

Flush with a large amount of water and soap or mild detergent for at least 15 minutes until no evidence of chemical remains.

Get medical attention.

EYE CONTACT

Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open until no evidence of chemical remains.

Get medical attention immediately.

INGESTION

Do not induce vomiting as this may increase the risk of aspiration of methylene chloride into lungs causing chemical pneumonitis.

If vomiting occurs, keep victim's head lower than hips to prevent aspiration.

Never give anything by mouth to unconscious person.

If victim is conscious, wash victim's mouth with water, and give victim one or two glasses of water.

Get medical attention immediately.

PROTECTION OF FIRST-AIDERS

Wear rubber gloves and air-tight safety goggles.

5 . FIRE- FIGHTING MEASURES

EXTINGUISHING MEDIA

Suitable

Dry chemical powder, carbon dioxide.

SPECIFIC HAZARDS

Avoid inhalation of material or combustion products. Stay upwind.

May liberate toxic gases such as hydrogen chloride and phosgene by contact with flame.

SPECIFIC METHODS OF FIRE- FIGHTING

- Cool containers with water spray until well after the fire is out.
- Stay away from the ends of the tanks.
- Use extinguishing agents appropriate for surrounding fire.
- Reduce vapors with water spray.
- Wear protector such as self-contained breathing apparatus for fire fighting.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

- Keep unnecessary people away, isolate hazard area and deny entry.
- Wear protective clothing and gear to avoid splashing on the skin and inhalation of gas.
- Start working on the windward side.

ENVIRONMENTAL PRECAUTIONS

- Dike for later disposal.
- Prevent spills from entering sewers, watercourses or low areas.

METHODS FOR CLEANING UP

- Small spills : Absorb with sand or charcoal.
- Large spills : Dike for later disposal. Keep unnecessary people away, isolate hazard area and deny entry.

Recovery

- Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste containers using no sparking tools. Flush residual spill with copious amounts of water.
- Collect spilled material in appropriate container for disposal.

7. HANDLING AND STORAGE

- Handle and store in accordance with all current regulations.

HANDLING

TECHNICAL MEASURES

- Build the floor of the handling and storage areas using concrete to prevent spilled
- Precautions

- Wear protective clothing and gear to avoid splashing on the skin and inhalation of gas.
- Handle only in well ventilated area.
- Avoid rough handling of containers such as overturning, dropping and dragging.
- Avoid contact with skin, eyes and clothing.
- Prohibit unnecessary persons from entering handling area.

Safe handling advice

- Keep containers tightly close after handling.
- Handle this material separating from light metal, strong base and oxidizing materials.

STORAGE

- Keep containers tightly close.

TECHNICAL MEASURES

- Avoid direct sunshine. Store in cool and dark area.

STORAGE CONDITIONS

Suitable

Store in a cool, dry, well-ventilated location.

To be avoided

Avoid long storage periods since the product degrades with age.

Keep away from heat, steam, water or sunlight.

INCOMPATIBLE PRODUCTS

Separate from light metal, strong base and oxidizing materials.

Keep from any possible contact with water.

PACKING MATERIALS

Recommended

The recommended vessel is a tank made of stainless- steel.

Use the corrosion- proof materials for the lid of the vessel or the packing of the plug.

Fluorine resin sheet is recommended.

8 .EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING MEASURES

Use only with adequate ventilation and in closed systems.

Make available emergency shower and eye wash in the work area.

CONTROL PARAMETERS

ACGIH 2007 TWA 50ppm

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION

Gas mask for organic gas, air- supplied respirator, and self- contained breathing apparatus are used.

HAND PROTECTION

Solvent- resistant gloves

EYE PROTECTION

Chemical safety goggles

SKIN AND BODY PROTECTION

Solvent- resistant suit, boots, apron, etc.

9 .PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE

FORM liquid

COLOUR colorless

ODOUR perfume- like odor

pH not applicable

SPECIFIC TEMPERATURES AT WHICH CHANGES IN PHYSICAL STATE OCCUR

BOILING POINT 40.2°C

FLASHPOINT not applicable

AUTOIGNITION TEMPERATURE 662°C

DENSITY(20/4°C) 1.326

SOLUBILITY 2.0g/100g of water (20°C)

10 .STABILITY AND REACTIVITY

STABILITY

Stable at normal temperature and pressure.

POSSIBLE HAZARDOUS REACTIONS OCCURRING UNDER SPECIFIC CONDITIONS

May ignite explosively with Aluminum, Magnesium or strong base.

Non-flammable, but certain mixtures in air ignite by heat, sparks, flames, welding, cutting operations or high temperature.

HAZARDOUS DECOMPOSITION PRODUCTS

Vinyl chloride, hydrogen chloride, phosgene, and carbon monoxide

11 .TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Oral LD₅₀ (rat) 2,100 mg/kg

Inhalation LC₅₀ (rat) 53 mg/L (6h)

LOCAL EFFECTS

eye; May cause moderate irritation and damage for a while.

skin; Dissolves fat of the skin and causes slight irritation. Prolonged and repeated contact causes pain, finally redness, blisters and skin burns.

ingestion; Irritates the gastrointestinal tract and causes nausea, vomiting or diarrhea. In serious cases, causes coma or unconsciousness.

LONG TERM EXPOSURE

May cause unconsciousness and affect liver and kidney.

MUTAGENICITY

Slightly positive to bacteria, mold and mammals cells.

CARCINOGENICITY

Japanese Industrial Hygienics Association: 2group B

IARC: 2B (Possibly carcinogenic to humans), ACGIH: A3 (Suspected human carcinogen)

12 .ECOLOGICAL INFORMATION

FISH TOXICITY

Guppy LC₅₀ (14day) 294mg/kg

Fathead Minnow LC₅₀ (96hr) 310mg/kg (still water)

Fathead Minnow LC₅₀ (96hr) 193mg/kg (running water)

Killifish LC₅₀ (48hr) 331mg/kg

INFORMATION

ENVIRONMENTAL BEHAVIOR : Methylene chloride exists for 0.41years and decomposes with hydroxyl radicals produced by photochemistry in atmosphere. ODP (0.007) and HGWP (0.002) coefficients are very low values.

BIOACCUMULATION :Low bioaccumulation for carps.

BIODEGRADABILITY Slight microbial biodegradability.

13 .DISPOSAL CONSIDERATIONS

WASTE FROM RESIDUES

Dispose in accordance with all current regulations.

SMALL DISPOSAL :Do not bury or dump even a small amount of methylene chloride solution and contained waste.

LARGE DISPOSAL :Burn in incinerator equipped with afterburner and scrubber.

Dispose using authorized waste collection plant, or obtain the consent of pollution control authorities.

CONTAMINATED PACKAGING

Empty container should be recovered for reuse after washing.

14 .TRANSPORT INFORMATION

INFORMATION ON CODES AND CLASSIFICATIONS ACCORDING TO INTERNATIONAL REGULATIONS

UN NUMBER: DICHLORO METHANE- UN1593

TRANSPORT HAZARD CLASS: CLASS 6.1(TOXIC)

PACKING GROUP : III

MARITIME TRANSPORT IMDG: MARINE POLLUTANT

SPECIFIC PRECAUTIONARY TRANSPORT MEASURES AND CONDITIONS

Transport in accordance with all current regulations.

Transportation information must be carried by driver when carrying by vehicle.

Make sure no leaking containers.

Load containers avoiding turning upside- down, dropping, damaging and collapsing.

Carry in a container marked "UN" for ship or airplane transportation.

15 .REGULATORY INFORMATION

Regulatory information with regard to this substance in your country or in your region should be examined by your own responsibility.

16 .OTHER INFORMATION

The information herein is given in good faith, but no warranty is made, either express or implied. To the best of our knowledge, the information contained herein is accurate. However, Tokuyama Corporation doesn't assume any liability whatsoever for the accuracy or completeness of information contained herein.

Final determination of suitability of any material should be made on the sole responsibility of the user. All materials may present unknown hazards and should be used in caution. Although certain hazards are described herein, we make no warranty that these are all

hazards which exist.