

# Methylcyclohexane

## 1. IDENTIFICATION

### A. Product name:

Methylcyclohexane

### B. Recommended use of the chemical and restrictions on use:

- General use : Industrial solvent
- Restriction on use : Not available

### C. Information of manufacturer, supplier:

#### Company:

SK GlobalChemical Co.,Ltd.

#### Address:

Head office) 99, Seorin-dong, Jongno-gu, Seoul, Korea9,  
Factory) 110, Gosa-dong, Nam-gu, Ulsan, Korea,  
Laboratory)140-1, Wonchon-dong, Yuseong-gu, Daejeon, Korea

#### Emergency Telephone No:

+82-2-2121-6823, +82-52-208-3357, +82-42-609-8442

## 2. HAZARD IDENTIFICATION

### A. Classification:

Flammable liquids : 2  
Skin corrosion/irritation : 2  
Specific target organ toxicity(single exposure) : 3  
Aspiration hazard : 1  
Hazardous to the Aquatic Environment-Chronic hazard : 2

### B. Label element, including precautionary statements:

#### Symbols:



#### Signal word(s):

Danger

#### Hazard statement(s):

- H225: Highly flammable liquid and vapour
- H304: May be fatal if swallowed and enters airways

- H315: Causes skin irritation
- H336: May cause drowsiness and dizziness
- H411: Toxic to aquatic life with long lasting effects

**○ Precautionary statement(s):**

**⊙ Prevention**

- P210: Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
- P233: Keep container tightly closed.
- P240: Ground/bond container and receiving equipment.
- P241: Use explosion–proof electrical/ventilating/lighting/.../equipment.
- P242: Use only non–sparking tools.
- P243: Take precautionary measures against static discharge.
- P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
- P264: Wash ... thoroughly after handling.
- P271: Use only outdoors or in a well–ventilated area.
- P273: Avoid release to the environment.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.

**⊙ Response**

- P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
- P302+P352: IF ON SKIN: Wash with plenty of soap and water.
- P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing.

Rinse skin with water/shower.

- P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P312: Call a POISON CENTER or doctor/physician if you feel unwell.
- P321: Specific treatment (see ... on this label).
- P331: Do NOT induce vomiting.
- P332+P313: If skin irritation occurs: Get medical advice/attention.
- P362: Take off contaminated clothing and wash before reuse.
- P370+P378: In case of fire: Use ... for extinction.
- P391: Collect spillage.

**⊙ Storage**

- P403+P233: Store in a well–ventilated place. Keep container tightly closed.
- P403+P235: Store in a well–ventilated place. Keep cool.
- P405: Store locked up.

**⊙ Disposal**

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

**C. Other hazards which do not result in classification:**

○ NFPA grade (0 ~ 4 level)

- Health : 2 , Flammability : 3, Reactivity : 0

**D. Classification of the substance or mixture**

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical identity	Common name, synonym	CAS number	Percentages(%)
Methylcyclohexane	Cyclohexane, methyl-	108-87-2	100

The Others

#### 4. FIRST AID MEASURES

##### A. Eye contact:

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.
- Get medical attention immediately.

##### B. Skin contact:

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.
- Get medical attention immediately.

##### C. Inhalation:

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.
- Get medical attention immediately.

##### D. Ingestion:

- About whether I should induce vomiting Take the advice of a doctor.
- Rinse your mouth with water immediately.
- Get medical attention immediately.
- If swallowed, large amounts of water to drink and do not induce vomiting.

##### E. Most important symptoms/effect, acute and delayed:

- Not available

##### F. Indication of immediate medical attention and special treatment needed, if necessary:

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

#### 5. FIRE-FIGHTING MEASURES

##### A. Suitable extinguishing media:

- Dry chemical, carbon dioxide, regular foam extinguishing agent, spray
- Avoid use of water jet for extinguishing

##### B. Specific hazards arising from the chemical:

- Not available

##### C. Special protective equipment and precautions for firefighters:

- Move containers from fire area, if you can do without the risk.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Use appropriate extinguishing measure suitable for surrounding fire.
- Wear appropriate protective equipment.

- Keep containers cool with water spray.
- Vapor or gas is burned at distant ignition sources can be spread quickly.
- Due to the extremely low flash point, irrigating fire extinguishing may be less effective when put out a fire.

## 6. ACCIDENTAL RELEASE MEASURES

### A. Personal precautions, protective equipment and emergency procedures:

- Ventilate closed spaces before entering.
- Move container to safe area from the leak area.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

### B. Environmental precautions:

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.

### C. Methods and materials for containment and cleaning up:

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.
- Do not use plastic containers.

## 7. HANDLING AND STORAGE

### A. Precautions for safe handling:

- Since emptied containers retain product residue(vapor, liquid, solid) follow all MSDS and label warnings even after container is emptied.
- Avoid contact with incompatible materials.
- Get the manual before use.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.
- Avoid contact with heat, sparks, flame or other ignition sources.

### B. Conditions for safe storage. including incompatibilities:

- Save in cool, dry and well ventilated place.
- Do not apply any physical shock to container.
- Avoid direct sunlight.
- Keep sealed when not in use.
- No open fire.
- Collected them in sealed containers.
- Do not eat, drink or smoke when using this product.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### A. Exposure limits in the air of the workplace, biological limit values:

- ACGIH TLV
- [Methylcyclohexane] : TWA, 400 ppm (1610 mg/m<sup>3</sup>)
- OSHA PEL

- [Methylcyclohexane]:500ppm 2000mg/m<sup>3</sup>

**B. Appropriate engineering controls:**

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

**C. Individual protection measures:** **Respiratory protection:**

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).
- Any air-purifying respirator with a full facepiece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

 **Eye protection:**

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

 **Hand protection:**

- Wear appropriate chemical resistant glove.

 **Body protection:**

- Wear appropriate chemical resistant protective clothing.

**9. PHYSICAL AND CHEMICAL PROPERTIES****A. Appearance (physical state, colour etc):**

- Appearance : Liquid
- Color : colorless, clear

**B. Odour:**

characteristic hydrocarbon odor

**C. Odour threshold:**

Not available

**D. pH:**

Not available

**E. Melting point/freezing point:**

-126.7 °C

**F. Initial boiling point and boiling range:**

101 °C

**G. Flash point:**

-6 °C

**H. Evaporation rate:**

280 (ASTM D3539, n-BuAc=100)

**I. Flammability(solid, gas) :**

Not available

**J. Upper/lower flammability or explosive limits:**

6.7 / 1.2 %

**K. Vapour pressure:**

5.73 kPa at 25 °C

**L. Solubility(ies):**

14mg/L at 25 °C

**M. Vapour density:**

3.4

**N. Specific gravity:**

0.8

**O. Partition coefficient: n-octanol/water:**

3.61

**P. Auto-ignition temperature:**

258 °C

**Q. Decomposition temperature:**

Not available

**R. Viscosity:**

0.732mPas at 20 °C

**10. STABILITY AND REACTIVITY****A. Chemical stability:**

- This material is stable under recommended storage and handling conditions.

**B. Possibility of hazardous reactivity:**

- Cylinders exposed to fire may vent and release flammable gas.

**C. Conditions to avoid:**

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces
- Avoid contact with heat, sparks, flame or other ignition sources.

**D. Incompatible materials:**

- Not available

**E. Hazardous decomposition products:**

- May emit flammable vapour if involved in fire.

**11. TOXICOLOGICAL INFORMATION****A. Information on the likely routes of exposures:** **Inhalation exposure:**

- May be fatal if swallowed and enters airways

 **Ingestion exposure:**

- Harmful if swallowed

 **Skin exposure:**

- Cause mild skin irritation.

 **Eye exposure:**

- Cause eye irritation.

**B. Delayed and immediate effects and also chronic effects from short and long term exposure:** **Acute toxicity:**

- \* Oral
  - [Methylcyclohexane] : LD50 1200 mg/kg Other (Other)
- \* Dermal
  - [Methylcyclohexane] : LD50 > 86700 mg/kg Rabbit
- \* Inhalation
  - [Methylcyclohexane] : LC50 45.2 mg/l/4 hr Other (Other)

 **Skin corrosion/irritation:**

- Cause mild skin irritation.

 **Serious eye damage/irritation:**

– Cause eye irritation.

Respiratory sensitization:

– Not available

Skin sensitization:

– Not available

Carcinogenicity:

\* IARC

– Not available

\* OSHA

– Not available

\* ACGIH

– Not available

\* NTP

– Not available

\* EU CLP

– Not available

Germ cell mutagenicity:

– Not available

Reproductive toxicity:

– Not available

Specific target organ systemic toxicity–single exposure:

– May cause drowsiness and dizziness.

Specific target organ systemic toxicity–repeated exposure:

– Not available

Aspiration hazard:

– May be fatal if swallowed and enters airways

C. Numerical measures of toxicity(such as acute toxicity estimate):

–

## 12. ECOLOGICAL INFORMATION

A. Aquatic, terrestrial organisms toxicity:

Fish

– [Methylcyclohexane] : LC50 5.8 mg/ℓ 96 hr

Crustaceans

– [Methylcyclohexane] : LC50 3.3 mg/ℓ 96 hr

Algae

– Not available



**B. Persistence and degradability:**

- Persistence
- Not available
- Degradability
- Not available

**C. Bioaccumulative potential:**

- Bioaccumulative potential
- [Methylcyclohexane] : BCF 321
- Biodegradation
- Not available

**D. Mobility in soil:**

- Not available

**E. Other adverse effects:**

- Not available

**13. DISPOSAL CONSIDERATIONS****A. Disposal methods:**

- Since more than two kinds of designaed waste is mixed, it is difficult to treat seperatly, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- Incinerate the oil by separating the oil and water
- The remainder of the water after separation will be processed in a water pollution prevention facilities.
  
- Do incineration or stabilization of the residue after disposal as the method of evaporation and concentration.
- Do incineration of the residue after disposal as the method of agglomeration and precipitation.
  
- Take care of incinerate or stabilization after treatment, purified by means of Separation, distillation, extractio, filtration, pyrolysis

**B. Disposal considerations(Specify disposal container and methods):**

- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

**14. TRANSPORT INFORMATION****A. UN Number:**

- 2296

**B. UN Proper Shipping Name:**

- Methylcyclohexane

**C. Transport hazard class(es):**

- 3

**D. Packing group, if applicable:**

- II

**E. Environmental hazards:**

- Not applicable

**F. Special precautions for user:**

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : F-E (Non-water-reactive flammable liquids)
- EmS SPILLAGE SCHEDULE : S-D (Flammable liquids)

## 15. REGULATORY INFORMATION

**A. Safety, health and environmental regulations specific for the product in question:**

- POPs Management Law
  - Not applicable
- Information of EU Classification
  - \* Classification
    - [Methylcyclohexane] : F R11 Xn R65 Xi R38 R67 N R51-53
  - \* Risk Phrases
    - [Methylcyclohexane] : R11, R38, R51/53, R65, R67
  - \* Safety Phrase
    - [Methylcyclohexane] : S2, S9, S16, S33, S61, S62
- U.S. Federal regulations
  - \* OSHA PROCESS SAFETY (29CFR1910.119)
    - Not applicable
  - \* CERCLA Section 103 (40CFR302.4)
    - Not applicable
  - \* EPCRA Section 302 (40CFR355.30)
    - Not applicable
  - \* EPCRA Section 304 (40CFR355.40)
    - Not applicable
  - \* EPCRA Section 313 (40CFR372.65)
    - Not applicable
- Rotterdam Convention listed ingredients
  - Not applicable
- Stockholm Convention listed ingredients
  - Not applicable
- Montreal Protocol listed ingredients
  - Not applicable

## 16. OTHER INFORMATION

**A. References and sources for data:**

- The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.
- This Safety Data Sheet was compiled with data and information from the following sources: KOSHA,

NITE, ESIS, NLM, SIDS, IPCS

**B. Originated date:**

– 2015-06-12

**C. Revision number and date:**

– 3 times, 2016-03-02