



SAFETY DATA SHEET

METHYLCYCLOHEXANE

1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER

Product name: METHYLCYCLOHEXANE

Recommended use: Chemical for industry.

Manufacturer/Supplier: **MODERN CHEMICAL CO.,LTD.**
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2. HAZARDS IDENTIFICATION

Label elements

Pictogram



Signal word

Danger

Hazard statement(s):

- 1.) Highly flammable liquid and vapour.
- 2.) May be fatal if swallowed and enters airways.
- 3.) Causes skin irritation.
- 4.) May cause drowsiness or dizziness.
- 5.) Toxic to aquatic life
- 6.) Toxic to aquatic life with long lasting effects.

Precautionary statement(s):

- 1.) Keep away from heat/sparks/open flames/hot surfaces/other ignition sources. - No smoking.
- 2.) Keep container tightly closed.



- 3.) Ground/bond container and receiving equipment.
- 4.) Use explosion-proof electrical, ventilating, and lighting equipment.
- 5.) Use only non-sparking tools.
- 6.) Take precautionary measures against static discharge.
- 7.) Avoid breathing dust/fume/gas/mist/vapours/spray.
- 8.) Wash skin thoroughly after handling.
- 9.) Use only outdoors or in a well-ventilated area.
- 10.) Wear protective gloves/protective clothing/eye protection/face protection.
- 11.) IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
- 12.) IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- 13.) IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- 14.) Call a POISON CENTER or doctor/physician if you feel unwell.
- 15.) Do NOT induce vomiting.
- 16.) If skin irritation occurs: Get medical advice/attention.
- 17.) Take off contaminated clothing and wash before reuse.
- 18.) In case of fire: Use water fog, foam, carbon dioxide, dry sand, dry chemical or alcohol-resistant foam for extinction.
- 19.) Store in a well-ventilated place. Keep container tightly closed.
- 20.) Store in a well-ventilated place. Keep cool.
- 21.) Store locked up.
- 22.) Avoid release to the environment.
- 23.) IF ON SKIN: Wash with plenty of soap and water.
- 24.) Specific treatment (see details on label).
- 25.) Collect spillage.
- 26.) Contaminated work clothing should not be allowed out of the workplace.
- 27.) Dispose of contents/container in accordance with local/regional/national/international regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonym: Cyclohexane; methyl-; Cyclohexylmethane; Hexahydrotoluene; MCH; Methylcyclohexane (pure grade).

Ingredients	% (w/w)	CAS NO.
METHYLCYCLOHEXANE	100	108-87-2



4. FIRST AID MEASURES

- General advice:** Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.
- Inhalation:** Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.
- 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.
- Eye contact:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if felt uncomfortable.
- Ingestion:** Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:

Alcohol-resistant foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

Unsuitable Extinguishing Media:

Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from Chemicals:

Will form explosive mixtures with air. Fire exposed containers may vent contents through pressure relief valves thereby increasing fire intensity and/or vapour concentration. Vapours may travel to source of ignition and flash back. Liquid and vapour are flammable. Containers may explode when heated. Fire exposed containers may vent contents through pressure relief valves. May expand or decompose explosively when heated or involved in fire.

Special protective equipment for fire-fighters:

As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear. Fight fire from a safe distance, with adequate cover. Prevent fire extinguishing water from contaminating surface water or the ground water system.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions:** Avoid breathing vapors and contacting with skin and eye. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low



areas. Emergency personnel wear positive pressure self-contained breathing apparatus. Wear protective and anti-static clothing. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

Environmental precautions: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and Material for Containment and Clean Up:

Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

7. HANDLING AND STORAGE

Precautions for Safe Handling & Product Transfer:

Avoid inhalation of vapors. Use only non-sparking tools. To prevent fire caused by electrostatic discharge steam, equipment on all metal parts should be grounded. Use explosion proof equipment. Handling is performed in a well ventilated place. Wear suitable protective equipment. Avoid contact with skin and eyes. Keep away from heat/sparks/open flames/hot surfaces. Take precautionary measures against static discharges.

Conditions for Safe Storage & Unsuitable Materials:

Keep containers tightly closed. Keep containers in a dry, cool and well-ventilated place. Keep away from heat/sparks/open flames/hot surfaces. Store away from incompatible materials and foodstuff containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits: TWA 400 - 500 ppm

Appropriate Engineering Controls: Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting/equipment. Set up emergency exit and necessary risk-elimination area.

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.

- Hand protection:** Wear appropriate chemical resistant glove.
- 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.
- Skin and body protections:** Wear fire/flame resistant/retardant clothing and antistatic boots.
- Hygiene measures:** Smoking, eating and drinking water is forbidden in the workplace. After work, shower and change clothes. To maintain good health habits.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form, Color and Odor : liquid, colourless, Mild	Evaporation rate : 280 (n-BuAc = 100)
Melting Point : -126.7 °C	Specific gravity : 0.772 – 0.776 g/cm ³ at 15.56 °C
pH : N/A	Solubility in water : 14 mg/L at 25°C
Boiling point : 100.4 – 101 °C	Viscosity : 0.732 mPas at 20 °C
Vapor pressure : 5.73 kPa at 25°C, 1.6 PSI at 37.8°C	Vapor density : 3 – 3.4 (air=1)
Lower explosive limits: 1.2%Vol	Upper explosive limits: 6.7% Vol
Auto-ignition temperature: 258 – 285 °C	Flash Point: (-6) – (-3) °C
Odor threshold: N/A	Flammability (solid, gas): N/A
Decomposition temperature: N/A	Solubility in other solvents: N/A
n-octanol/water partition coefficient (log P_{ow}): 3.61	

10. STABILITY AND REACTIVITY

- Chemical Stability:** Stable under recommended storage conditions.
- Reactions:** No data available
- Possibility of Hazardous Reactions:** Cylinders exposed to fire may vent and release flammable gas.
- Conditions to avoid:** incompatible materials, heat, flame, spark, accumulation of electrostatic charges, hot surfaces and other ignition sources.



- Materials to avoid:** May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
- Hazardous decomposition products:** Under normal conditions of storage and use, hazardous decomposition products should not be produced. May emit flammable vapour if involved in fire. Hydrocarbons and carbon oxides.

11. TOXICOLOGICAL INFORMATION

- Acute toxicity:** LD50 (Oral, rat): 3200 mg/kg
LD50 (Oral, rabbit): 4000-4500 mg/kg
LD50 (Dermal, rabbit): >86700 mg/kg
LC50 (Inhalation, mouse): 41 mg/l –2h
- Sensitization:** May be fatal if swallowed and enters airways. Causes skin irritation. May cause drowsiness or dizziness. Causes eye irritation.
- Chronic toxicity:** Carcinogenicity: Not available.
Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Animal testing did not show any effects on fetal development. Animal testing did not show any effects on fertility.
- Further toxicological information:** Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Concentrations substantially above the TLV value may cause narcotic effects. Solvents may degrease the skin.

12. ECOLOGICAL INFORMATION

Toxicity

- Toxicity to fish: LC50 - Fish: 2.07 - 5.80 mg/l -96 h
- Toxicity to aquatic invertebrates: EC50 - Crustaceans: 0.33 mg/l - 48h
LC50 - Crustaceans: 3.3 mg/l-96h
EC50 - Daphnia magna(water flea): 0.326 mg/l-48h
- Toxicity to algae: ErC50 - Algae: 0.34 mg/l-72h
EC50 - Pseudokirchneriella subcapitata(green algae): 0.134 mg/l-72h
- Toxicity Bacterial: IC50 – Bacteria: 29 mg/l -15h
- Biodegradability Remarks: Aerobic 0% ,Testing period: 28 d.
- Bioaccumulative Potential: Bioconcentration factor: BCF 321



Mobility: No data available.

Affected in any other way: Toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

Material Disposal: The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Container Disposal: Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

14. TRANSPORT INFORMATION

ADR/DOT

UN No: 2296 Class: 3 Packing group: II

Label(s): 3 Marine pollutant: Yes

Proper shipping name: Methylcyclohexane

IMGD

UN No: 2296 Class 3 Packing group: II

Label(s): 3 EMS No.: F-E, S-D Marine pollutant: Yes

Proper shipping name: METHYLCYCLOHEXANE

IATA

UN No: 2296 Class: 3 Packing group: II

Label(s): 3 Marine pollutant: Yes

Proper shipping name: Methylcyclohexane

15. REGULATORY INFORMATION

Regulatory information

COMPONENT	A	B	C	D	E	F	G	H
Methylcyclohexane	Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed

[A] Catalog of Hazardous Chemicals (2015 Edition), Notice 5th 2015, China State Administration of Work Safety.

[B] Catalog of Priority Hazardous Chemicals for Environment Management, Notice 33th 2014, Ministry of Environmental Protection of PRC.



[C] List of Toxic Chemicals Restricted to be Imported/Exported in China, Notice 85th 2013, Ministry of Environmental Protection of PRC.

[D] Catalog of Stupefacient and Psychotropic Substances (2013Edition), Notice 230th 2013, China Food and Drug Administration.

[E] Catalog of Hazardous Chemicals for Priority Management(First and Second batches), Notice 95th, 2011, Notice 12th 2013, China State Administration of Work Safety

[F] List of Ozone Depletion Chemicals Controlled to be Imported/Exported in China(First to Sixth batches), Notice from 2000 to 2012 Ministry of Environmental Protection of PRC.

[G] Dangerous Chemicals Directory Used to Manufacture Exploder(2011 Edition), Notice 25th Nov. 2011, Ministry of Public Security of PRC1.

[H] Catalog of Highly Toxic Chemicals, Notice 142th 2003, China Ministry of Health.

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

National legislation

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Skin corrosion or irritation
Specific target organ toxicity (single or repeated exposure)
Aspiration hazard

16. Other Information

Modern Chemical Co.,Ltd. provides the information contained herein in good faith but makes no representation as to its comprehensive or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.

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