Safety Data Sheet

Methyl Cyclohexane

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*According to GHS (Tenth Revised Edition)

Part 1: Identification

Product identifier

Product Name	Methyl Cyclohexane
CAS No.	108-87-2
EC No.	203-624-3
Molecular Formula	C_7H_{14}

Recommended use of the product and restrictions on use

Relevant identified uses	coating
Uses advised against	Please consult manufacturer.

Details of the supplier

Applicant Name	Changde New Materials Technology Co., Ltd. Yueyang Yunxi Branch
Applicant Address	No. 03 Xihuan Road, Hunan Yueyang Green Chemical High-tech Industrial Development Zone, Yunxi Street, Yunxi District, Yueyang City, Hunan Province, P.R.China
Applicant Post Code	414009
Applicant Telephone	86-730-3062661
Applicant Fax	
Applicant E-mail	
Supplier Name	Changde New Materials Technology Co., Ltd. Yueyang Yunxi Branch
Supplier Address	No. 03 Xihuan Road, Hunan Yueyang Green Chemical High-tech Industrial Development Zone, Yunxi Street, Yunxi District, Yueyang City, Hunan Province, P.R.China
Supplier Post Code	414009
Supplier Telephone	86-730-3062661
Supplier Fax	
Supplier E-mail	

Emergency phone number

Emergency phone number	86-532-83889090

Part 2: Hazard(s) identification

Hazard classification according to GHS

Flammable Liquids	Category 2
Aspiration Hazard	Category 1
Skin Corrosion/Irritation	Category 2
Specific target organ toxicity, single exposure; Narcotic effects	Category 3

Hazardous To The Aquatic Environment – Long-Term (Chronic) Hazard	Category 2

GHS Label elements

Hazard pictograms	
Signal word	**Danger**

Hazard statements

H225	Highly flammable liquid and vapour
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H336	May cause drowsiness or dizziness
H411	Toxic to aquatic life with long lasting effects

Precautionary statements

- Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof [electrical/ventilating/lighting] equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P261	Avoid breathing gas/mist/vapour/spray.
P264	Wash hands and other parts of the body (if related) thoroughly after handling.
P271	Use only outdoors or with adequate ventilation.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

- Response

P319	Get medical help if you feel unwell.
P321	Specific treatment (see related instructions on the label).
P331	Do NOT induce vomiting.
P391	Collect spillage.
P301+P316	IF SWALLOWED: Get emergency medical help immediately.
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P332+P317	If skin irritation occurs: Get medical help.
P362+P364	Take off contaminated clothing and wash it before reuse.
P370+P378	Small fire: dry chemical, CO2 or alcohol-resistant foam; Large fire: alcohol-resistant foam; Fire involving tanks, rail tank cars or highway tanks: Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas

	with water [or shower].

◆ Storage

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

◆ Disposal

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

Hazard description

◆ Physical and chemical hazards

	Highly flammable liquids, its vapor and air mixture can form explosive mixture.

◆ Health hazards

Inhaled	Dizziness. Drowsiness.
Ingestion	Nausea. (Further see Inhalation).
Skin Contact	Dry skin.
Eye	Redness.

◆ Environmental hazards

	This product is toxic to aquatic life with long lasting effects. Please refer to 12th chapter of SDS.

Part 3: Composition/information on ingredients

Substance/mixture

	Substance

Component	CAS No.	EC No.	Concentration (weight percent, %)
Methyl Cyclohexane	108-87-2	203-624-3	99.9

Part 4: First-aid measures

Description of first aid measures

General advice	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
Eye contact	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
Skin contact	Remove contaminated clothes. Rinse skin with plenty of water or shower.
Ingestion	Rinse mouth. Rest. Refer for medical attention.
Inhalation	Fresh air， rest. Artificial respiration if indicated. Refer for medical attention.
Protecting of first-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

Most important symptoms/effects, acute and delayed

1	Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

Indication of any immediate medical attention and special treatment needed

1	Treat symptomatically.
2	Symptoms may be delayed.

Part 5: Fire-fighting measures

Extinguishing media

Suitable extinguishing media	Small fire: dry chemical, CO2 or alcohol-resistant foam; Large fire: alcohol-resistant foam; Fire involving tanks, rail tank cars or highway tanks: Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out.
Unsuitable extinguishing media	Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the substance or mixture

1	Will form explosive mixtures with air.
2	Fire exposed containers may vent contents through pressure relief valves thereby increasing fire intensity and/ or vapour concentration.
3	Vapours may travel to source of ignition and flash back.
4	Liquid and vapour are flammable.
5	Development of hazardous combustion gases or vapor possible in the event of fire.
6	May expansion or decompose explosively when heated or involved in fire.

Special protective equipment and precautions for fire-fighters

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

Part 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

1	Avoid breathing vapours and contacting with skin and eye.
2	Beware of vapours accumulating to form explosive concentrations.
3	Vapours can accumulate in low areas.
4	Emergency personnel wear positive pressure self-contained breathing apparatus. Wear protective and anti-static clothing. Wear chemical impermeable gloves.
5	Use personal protective equipment,do not breathe gas/mist/vapour/spray.
6	Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
7	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental precautions

1	Prevent further leakage or spillage if safe to do so.
2	Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

1	Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.
2	Water spray reduces evaporation but does not reduce the flammability of spills in confined spaces.
3	It is recommended that emergency personnel wear positive pressure self-contained breathing apparatus and wear anti-static clothing.
4	In case of small amount of spillage, use clean non sparking tools to collect absorption materials.

5	In case of large amount of spillage, construct cofferdam or dig a hole to collect the spillage. Use foam cover to reduce evaporation. Water spray mist can reduce evaporation, but can not reduce the flammability of the leakage in the restricted space.
6	Collect absorbent material using a clean, non-sparking tool.
7	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.
8	Cover with anti-solvent foam to reduce evaporation.
9	Cut off the source of the leak as much as possible.
10	Keep leaks in a ventilated place.
11	Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
12	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.
13	Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container.

Part 7: Handling and storage

Precautions for safe handling

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

Conditions for safe storage, including any incompatibilities

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

Part 8: Exposure controls/personal protection

Control parameters

Component	Country/Region	Limit value - Eight hours		Limit value - Short term	
		ppm	mg/m³	ppm	mg/m³
Methyl Cyclohexane	Australia	400	1610	-	-
	Canada - Ontario	400	-	-	-
	Canada - Québec	400	1610	-	-
	France	400	1600	-	-
	Germany (AGS)	200	810	400	1620
	Germany (DFG)	200	810	400	1620

- Biological limit values

Biological limit values	No relevant regulations

- Monitoring methods

1	EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to

	chemical and biological agents.
2	GBZ/T 300 series standard Determination of toxic substances in workplace air.

Engineering controls

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

Personal protection equipment

General requirement	
Eye protection	Must wear appropriate safety goggles.
Hand protection	Must wear anti static chemical protective gloves.
Respiratory protection	Must wear appropriate personal respiratory protective equipment.
Skin and body protection	Must wear anti static chemical protective clothing and anti static shoes.

Part 9: Physical and chemical properties

Physical and chemical properties

Physical state	Transparant liquid
Colour	Colorless
Odor	No information available
Odor threshold	No information available
pH	No information available
Melting point/freezing point(°C)	-126.7
Initial boiling point and boiling range(°C)	101
Flash point(Closed cup,°C)	-3
Evaporation rate	No information available
Flammability	Highly flammable
Upper/lower explosive limits[%(v/v)]	Upper limit：6.7；Lower limit：1.2
Vapor pressure	5.73kPa（25°C）
Relative vapour density(Air＝1)	3.4
Relative density(Water=1)	0.8
Solubility	Insoluble in water
n-octanol/water partition coefficient	3.88
Auto-ignition temperature(°C)	258
Decomposition temperature(°C)	＞500
Kinematic viscosity	No information available
Particle characteristics	Not applicable

Part 10: Stability and reactivity

Stability and reactivity

Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	No information available.
Conditions to avoid	Incompatible materials, heat, flame and spark.
Incompatible materials	No information available.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Part 11: Toxicological information

Acute toxicity

Component	LD_{50}(oral)	LD_{50}(dermal)	LC_{50}(inhalation,4h)
Methyl Cyclohexane	> 3200mg/kg(Rat)	No information available	No information available

Carcinogenicity

Component	List of carcinogens by the IARC Monographs	Report on Carcinogens by NTP
Methyl Cyclohexane	Not Listed	Not Listed

Others

	Methyl Cyclohexane(Component)
Skin corrosion/irritation	Causes skin irritation(Category 2)
Serious eye damage/irritation	Based on available data, the classification criteria are not met
Skin sensitization	Based on available data, the classification criteria are not met
Respiratory sensitization	Based on available data, the classification criteria are not met
Reproductive toxicity	Based on available data, the classification criteria are not met
STOT-single exposure	May cause drowsiness or dizziness(Category 3)
STOT-repeated exposure	Based on available data, the classification criteria are not met
Aspiration hazard	May be fatal if swallowed and enters airways(Category 1)
Germ cell mutagenicity	Based on available data, the classification criteria are not met

Part 12: Ecological information

Acute aquatic toxicity

Component	Fish	Crustaceans	Algae
Methyl Cyclohexane	LC_{50}: 2.1mg/L (96h)(Oryzias latipes)	EC_{50}: 0.33mg/L (48h)(Daphnia magna)	ErC_{50}: 0.34mg/L (72h)(Pseudokirchneriella subcapitata)

Chronic aquatic toxicity

Component	Fish	Crustaceans	Algae
Methyl Cyclohexane	No information available	No information available	NOEC：0.067mg/L(Pseudokirchneriella subcapitata)

Persistence and degradability

Persistence and degradability	No information available

Bioaccumulative potential

Bioaccumulative potential	No information available

Mobility in soil

Mobility in soil	No information available

Results of PBT and vPvB assessment

Component	Results of PBT and vPvB assessment [according to (EC) No 1907/2006]
Methyl Cyclohexane	Not PBT/vPvB

Part 13: Disposal considerations

Disposal considerations

Waste chemicals	Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.
Contaminated packaging	Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.
Disposal recommendations	Refer to section waste chemicals and contaminated packaging.

Part 14: Transport information

Label

Transporting Label	

IMDG-CODE

UN number	2296
UN proper shipping name	METHYLCYCLOHEXANE
Transport hazard class	3
Transport subsidiary hazard class	None
Packing group	II
Marine pollutant (Yes or no)	Yes

ICAO/IATA-DGR

UN number	2296
UN proper shipping name	METHYLCYCLOHEXANE
Transport hazard class	3
Transport subsidiary hazard class	None
Packing group	II

UN-ADR

UN number	2296
UN proper shipping name	METHYLCYCLOHEXANE
Transport hazard class	3
Transport subsidiary hazard class	None

Packing group	II

Special precautions for user

Transport in bulk according to IMO instruments

- Transport in bulk according to Annex II of MARPOL and the IBC code

No information available

- Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

No information available

- Transport in bulk in accordance with the IGC Code

No information available

Part 15: Regulatory information

International chemical inventory

Component	EC inventory	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AIICS	ENCS
Methyl Cyclohexane	√	√	√	√	√	√	√	√	√

【EC inventory】 European Inventory of Existing Commercial Chemical Substances
【TSCA】 United States Toxic Substances Control Act Inventory
【DSL】 Canadian Domestic Substances List
【IECSC】 China Inventory of Existing Chemical Substances
【NZIoC】 New Zealand Inventory of Chemicals
【PICCS】 Philippines Inventory of Chemicals and Chemical Substances
【KECI】 Korea Existing Chemicals Inventory
【AIICS】 Australian. Inventory of Industrial Chemical (AIICS)
【ENCS】 Japan Inventory of Existing & New Chemical Substances

Note:

"√" Indicates that the substance included in the regulations.

"×" No data or not included in the regulations.

Part 16: Other information

Information on revision

Creation Date	2024/08/20
Revision Date	2025/05/07
Reason for revision	-

Reference

【1】 IPCS: The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home.
【2】 IARC, website: http://www.iarc.fr/.
【3】 OECD: The Global Portal to Information on Chemical Substances, website: https://www.echemportal.org/echemportal/.
【4】 CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple.
【5】 NLM: ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp.
【6】 EPA: Integrated Risk Information System, website: http://cfpub.epa.gov/iris/.
【7】 U.S. Department of Transportation: ERG, website: http://www.phmsa.dot.gov/hazmat/library/erg.
【8】 Germany GESTIS-database on hazard substance, website: http://gestis-en.itrust.de/.

Abbreviations and acronyms

CAS	Chemical Abstracts Service	UN	The United Nations

PC-STEL	Short term exposure limit	OECD	Organization for Economic Co-operation and Development
PC-TWA	Time Weighted Average	IMDG-CODE	International Maritime Dangerous Goods CODE
MAC	Maximum Allowable Concentration	IARC	International Agency for Research on Cancer
DNEL	Derived No Effect Level	ICAO	International Civil Aviation Organization
PNEC	Predicted No Effect Concentration	IATA	International Air Transportation Association
NOEC	No Observed Effect Concentration	ACGIH	American Conference of Governmental Industrial Hygienists
LC_{50}	Lethal Concentration 50%	NFPA	National Fire Protection Association
LD_{50}	Lethal Dose 50%	NTP	National Toxicology Program
EC_{50}	Effective Concentration 50%	PBT	Persistent, Bioaccumulative, Toxic
EC_X	Effective Concentration X%	vPvB	very Persistent, very Bioaccumulative
P_{OW}	Partition coefficient Octanol: Water	CMR	Carcinogens, mutagens or substances toxic to reproduction
BCF	Bioconcentration factor	RPE	Respiratory Protective Equipment
ED	Endocrine disruptor	G1	Carcinogenic to humans
G2A	Probably carcinogenic to humans	G2B	Possibly carcinogenic to humans
G3	Not yet classified as carcinogenic to humans	G4	Probably not carcinogenic to humans

Disclaimer

This Safety Data Sheet (SDS) was prepared according to UN GHS (the 10th revised edition). The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.