

SECTION 1 Chemical product and company identification

Chemical Chinese name	: 甲醇
Chemical English name	: Methanol
Name of company	: Methanex Services (Shanghai) Co., Ltd.
Title	: Supplier
Address	: Room 403, Build#2, No.458 Fute Rd.(N), Waigaoqiao Free Trade Zone, Shanghai, China
Postal code	: 200131
Fax	: +86-21-60231001
Tel.	: +86-21-60231014
E-mail	: jjj@methanex.com
Recommended use of the chemical	: Chemical raw materials
Restricted use of the chemical	: No information available
Emergency Phone Number	: NRCC: +86-532-83889090

SECTION 2 Hazards identification

Emergency overview




Colorless transparent liquid. Highly flammable liquid and vapour. Toxic if swallowed, in contact with skin or if inhaled. Causes damage to organs.

GHS hazard classification

Physical hazards	: Flammable liquids, Category 2
Health hazards	: Acute toxicity (Oral), Category 3
	: Acute toxicity (Dermal), Category 3
	: Acute toxicity (Inhalation), Category 3
	: Specific target organ toxicity - Single exposure, Category 1

Other hazards not mentioned above are Not applicable or No data is available.

Label elements

Hazard pictograms (GHS CN)	:   
Signal word (GHS CN)	: Danger
Hazard statements (GHS CN)	: H225 - Highly flammable liquid and vapour H301+H311+H331 - Toxic if swallowed, in contact with skin or if inhaled H370 - Causes damage to organs.

Precautionary statements (GHS CN)

Prevention measures	: P210 - Keep away from heat/sparks/open flames/hot surfaces and other ignition sources. No smoking.
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P233 - Keep container tightly closed.
P240 - Ground/bond container and receiving equipment.
P241 - Use explosion-proof electrical/ventilating/lighting equipment.
P242 - Use non-sparking tools only.
P243 - Take precautionary measures against static discharge.
P260 - Do not breathe dust/fume/gas/mist/vapours/spray.
P264 - Wash contact area thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.

Incident response

: P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor.
P302+P352 - IF ON SKIN: Wash with plenty of water.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P311 - IF exposed or concerned: Call a POISON CENTER or doctor.
P321 - Specific treatment (see first aid instruction on this label).
P330 - Rinse mouth.
P361 - Take off immediately all contaminated clothing.
P363 - Wash contaminated clothing before reuse.
P370+P378 - In case of fire: Use dry powder, carbon dioxide or alcohol-resistant foam to extinguish.
: 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.
: P501 - Dispose of contents/container to licensed hazardous or special waste management site, in accordance with local, regional, national and/or international regulation.

Safe storage

Disposal

Physical and chemical hazards

Highly flammable liquid and vapour. Mixtures >20% methanol with water: flammable. May form explosive mixture with air.

Health hazards

Toxic if swallowed, in contact with skin or if inhaled
Causes damage to organs

Environmental hazards

No additional information available

Other hazards

No additional information available

SECTION 3 Composition/information on ingredients

Product form : Substance.

Ingredient(s)	Concentration or concentration ranges (w/w %)	CAS No.
Methanol	100	67-56-1

SECTION 4 First-aid measures

Description of necessary first-aid measures

- First-aid measures general : Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.
- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. If breathing is difficult, give oxygen and contact a physician immediately.
- First-aid measures after skin contact : Take off contaminated clothing and shoes immediately. Wash off with plenty of water for at least 15 minutes and call a physician if feel uncomfortable.
- First-aid measures after eye contact : Rinse thoroughly with plenty of water for at least 15 minutes and call a physician if feel uncomfortable.
- First-aid measures after ingestion : Rinse mouth. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.

Most important symptoms/effects

Toxic if swallowed, in contact with skin or if inhaled. If swallowed there is a risk of blindness. May be fatal if swallowed. Ingestion causes nausea, weakness and central nervous system effects, headache, vomiting, dizziness, symptoms of drunkenness. Coma and death due to respiratory failure may follow severe exposures.

Advices for first aid responders

Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

Notes for the doctor

- Other medical advice or treatment : Treat symptomatically. Symptoms may be delayed. The severity of outcome following methanol ingestion may be more related to the time between ingestion and treatment, rather than the amount ingested. Antidote reference: fomepizole which enhances elimination of metabolic formic acid.

SECTION 5 Fire-fighting measures

Extinguishing media

- Suitable extinguishing media : Dry powder, carbon dioxide or alcohol-resistant foam
- Unsuitable extinguishing media : Do not use a high-pressure water stream as it may scatter or spread fire

Specific hazards

- Fire hazard :
 1. Will form an explosive mixture with air
 2. A closed container on fire may discharge its contents through a pressure relief valve, thereby increasing the fire and/or vapor concentration

3. The vapor is heavier than air and may travel along the ground to the ignition source and flash back
4. Highly flammable Liquid and vapor
5. The flame is invisible in daylight
6. The container may rupture or explode if exposed to heat
7. Mixtures of methanol and water at concentrations greater than 20% methanol are still considered flammable.
8. Hazardous gases may accumulate in confined spaces, causing toxic and flammable hazards.

Hazardous decomposition products in case of fire : May release toxic gases, toxic vapors, carbon monoxide, carbon dioxide, and formaldehyde.

Advice for firefighters and protective measures

- Firefighting instructions : Fight fire from a safe distance, with full protective firefighting gear
Prevent firefighting water from entering drains or water sources.
- Protection during firefighting : Do not attempt to take action without suitable protective equipment
Wear self-contained breathing apparatus
Complete protective clothing

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

- General measures : Evacuate the area promptly and keep upwind of the spilled material. Ensure adequate ventilation. Eliminate all sources of ignition. Take special care to avoid static electricity.
- Personal Precautions, Protective Equipment and Emergency Procedures : 1. Avoid inhalation of vapors and contact with skin and eyes
2. Vapors can accumulate in low areas. Beware of vapors accumulating to form explosive concentrations
3. Emergency personnel wear positive pressure self-contained breathing apparatus. Wear protective clothing and anti-static clothing. Wear chemical impermeable gloves.
4. Use personal protective equipment. Avoid inhalation of vapors, mist, gas or dust.

For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel
No open flames, sparks, no smoking
Wear appropriate personal protective equipment and avoid inhalation of dust/fume/gas/mist/vapor/spray.
Avoid contact with skin, eyes and clothing

For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment
For further information refer to section 8: "Exposure controls/personal protection"

Environmental precautions

- 1 Take measures to prevent further leakage or overflow if safe to do so.
- 2 Avoid release to the environment

Methods and material for containment and cleaning up

- Methods for cleaning : 1. Small spills: absorb spilled material with dry sand or non-combustible absorbent.
2. Collect spilled material in appropriate container for disposal in accordance with local laws and regulations.
3. Remove all sources of ignition. Use non-sparking tools and explosion-proof equipment.
- For containment : Large spill: contain the released material by diking the containment area with non-combustible absorbent. Alcohol resistant foam may be applied to spill to diminish vapour and fire hazard.

Prevention measures for secondary accidents

- Prevention Measures for Secondary Accidents : No additional information available
- Other information : Dispose of solid substances or residues to licensed hazardous or special waste collection management site

SECTION 7 Handling and storage

Handling

- Precautions for safe handling : Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- Ground/bond container and receiving equipment.
- Use non-sparking tools and explosion-proof equipment only.
- Take precautionary measures against static discharges. Wear appropriate personal protective equipment to avoid inhalation of dust/fume/gas/mist/vapor/spray.
- Strictly avoid contact with eyes, skin or clothing.
- Use in a well-ventilated area.
- Empty containers may contain residual amounts of flammable vapors, which must be handled with care.
- Hygiene measures : Do not eat, drink or smoke when using this product.
- Always wash hands after handling the product
- Local and general ventilation : Use in a well ventilated area.

Storage

- Storage conditions : Store in a cool, well-ventilated and dry place.
- Store at room temperature.
- Keep container tightly closed.
- Store locked up and keep unauthorized personnel away
- Keep in fireproof place, have appropriate fire extinguishers and spill cleanup equipment in or near storage area.
- Technical measures : Provide the container and receiving equipment with earthing.

Material used in packaging/containers : Suitable materials: carbon steel, stainless steel, glass.

Materials to avoid: lead, aluminum, zinc, oxidizer, strong acid, strong alkali, polyethylene, polyvinyl chloride (polyvinyl chloride), nitrile.

SECTION 8 Exposure controls / Personal protection equipment

Occupational exposure limits

Methyl alcohol (67-56-1)	
China - Occupational Exposure Limits	
Local name	甲醇 # Methanol
OEL PC-TWA	25 mg/m ³
OEL PC-STEL	50 mg/m ³
Chemical category	Skin notation
Catalogue of Occupational Hazard Factors	Category 3 - Chemicals
Remark (CN)	皮
Regulatory reference	GBZ 2.1-2019
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA [ppm]	200 ppm
ACGIH OEL STEL [ppm]	250 ppm
ACGIH chemical category	Skin - potential significant contribution to overall exposure by the cutaneous route

Biological limit values

Methyl alcohol (67-56-1)	
USA - ACGIH - Biological Exposure Indices	
BEI	15 mg/l Parameter: Methanol - Medium: urine - Sampling time: end of shift (background, nonspecific)

Monitoring methods

1. EN14042 workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemicals and biological agents
2. GBZ/T 160 Determination of toxic substances in workplace air (Series effective standard) and GBZ/T 300 Determination of toxic substances in workplace air (Series standard)

Appropriate 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 protective equipment

Environmental exposure controls	: Avoid release to the environment.
Hand protection	: Chemical protection gloves (such as butyl rubber gloves)
Eye protection	: Chemical goggles
Skin and body protection	: Wear flame-retardant and anti-static protective clothing and anti-static protective boots
Respiratory protection	: Wear full-face respiratory protection in case of insufficient ventilation
Personal protective equipment symbol(s)	



SECTION 9 Physical and chemical properties

Physical state	: Liquid
Appearance	: Colourless transparent liquid
Odour	: No data available
pH	: Not applicable
Melting point	: -97.8 °C
Freezing point	: -97.6 °C
Boiling point	: 64.7 °C
Flash point	: 11 °C
Auto-ignition temperature	: 464 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapour pressure	: 12.8 kPa (@20°C)
Relative vapour density (Air=1)	: 1.1 (@20°C)
Relative density (Water =1)	: 0.791-0.793 (@20°C)
Solubility	: Miscible with water
Partition coefficient n-octanol/water (Log Pow)	: -0.77
Lower explosive limit (LEL)	: 5.5%
Upper explosive limit (UEL)	: 36.5%
Radioactive	: No
Dynamic viscosity	: 0.8 cP @20°C

SECTION 10 Stability and reactivity

Chemical stability	: Stable under proper operation and storage conditions.
Reactivity	: Liquids and vapors are highly flammable, and may decompose or undergo other chemical reactions in contact with incompatible materials. Hygroscopic.
Possibility of hazardous reactions	: Contact with oxidants can cause severe reactions, and may cause a fire or explosion.
Conditions to avoid	: Avoid heat sources and high temperatures. Keep away from open flames and sparks, remove all ignition sources
Incompatible materials	: Lead, aluminum, zinc, oxidizer, strong acid, strong alkali, polyethylene, polyvinyl chloride (polyvinyl chloride), nitrile
Hazardous decomposition products	: Heat, carbon monoxide, carbon dioxide, flammable gases, formaldehyde
Other properties	: No additional information available

SECTION 11 Toxicological information

Acute toxicity

Acute toxicity (oral)	: Toxic if swallowed.
Acute toxicity (dermal)	: Toxic in contact with skin.
Acute toxicity (inhalation)	: Toxic if inhaled.

Methyl alcohol

ATE CN (oral)	100 mg/kg bodyweight
ATE CN (dermal)	300 mg/kg bodyweight
ATE CN (vapours)	3 mg/l/4h

Skin corrosion/irritation

Skin corrosion/irritation	: No data available
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Serious eye damage/eye irritation

Serious eye damage/irritation	: No data available
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Respiratory or skin sensitisation

Respiratory or skin sensitisation	: No data available
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Germ cell mutagenicity

Germ cell mutagenicity	: No data available
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Carcinogenicity

Carcinogenicity	: No data available
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Reproductive toxicity

Reproductive toxicity	: No data available
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STOT - single exposure

STOT-single exposure : Causes damage to organs.

Methyl alcohol

STOT-single exposure	Causes damage to organs.
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STOT - repeated exposure

STOT-repeated exposure : No data available

Aspiration hazard

Aspiration hazard : No data available

SECTION 12 Ecological information

Ecotoxicity

Ecology - general : Avoid release to the environment

Hazardous to the aquatic environment, short-term (acute) : No data available

Hazardous to the aquatic environment, long-term (chronic) : No data available

Methyl alcohol

LC50 - Fish [1]	28200 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
LC50 - Fish [2]	> 100 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 - Crustacea [1]	22200 mg/l (Daphnia magna)(OECD 202)
BCF - Fish [1]	< 10

Persistence and degradability

Methyl alcohol

Persistence and degradability	Rapidly degradable
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Bioaccumulative potential

Methyl alcohol

BCF - Fish [1]	See section 12.1 on ecotoxicology < 10
Partition coefficient n-octanol/water (Log Pow)	-0.77

Mobility in soil

Methyl alcohol

Partition coefficient n-octanol/water (Log Pow)	-0.77
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Other adverse effects

Classification procedure (Ozone) : No data available

SECTION 13 Disposal considerations

Waste treatment methods

: Refer to relevant national and local regulations before disposal. Dispose of the contents and containers according to the classification instructions of the qualified hazardous waste companies.







Contaminated container and packaging

: Empty containers may contain hazardous residue. Keep away from heat and fire sources.

Additional information

: Flammable vapors may remain in empty containers.

SECTION 14 Transport information

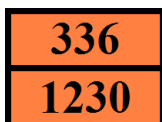
Overland transport (JT/T 617)	UN RTDG	Transport by sea	Air transport	Inland waterway transport	Rail transport
UN number					
1230	1230	1230	1230	1230	1230
Proper shipping name					
METHANOL	METHANOL	METHANOL	Methanol	METHANOL	METHANOL
Transport document description					
UN 1230, METHANOL, Class 3, (Division 6.1), PG II	UN 1230 METHANOL, 3 (6.1), II	UN 1230 METHANOL, 3 (6.1), II (12° C c.c.)	UN 1230 Methanol, 3 (6.1), II	UN 1230 METHANOL, 3 (6.1), II	UN 1230 METHANOL, 3 (6.1), II
Transport hazard class(es)					
3 (6.1)	3 (6.1)	3 (6.1)	3 (6.1)	3 (6.1)	3 (6.1)
					
Packing group					
II.	II.	II.	II.	II.	II.

Overland transport (JT/T 617)	UN RTDG	Transport by sea	Air transport	Inland waterway transport	Rail transport
Environmental hazards					
Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No

Special transport precautions

Overland transport (JT/T 617)

Classification code (JT/T 617)	: FT1.
Special provisions (JT/T 617)	: 279.
Limited quantities (JT/T 617)	: 1L.
Excepted quantities (JT/T 617)	: E2.
Packing instructions (JT/T 617)	: P001, IBC02.
Mixed packing provisions (JT/T 617)	: MP19.
Portable tank and bulk container instructions (JT/T 617)	: T7.
Portable tank and bulk container special provisions (JT/T 617)	: TP2.
Tank codes (JT/T 617)	: L4BH.
Tank special provisions (JT/T 617)	: TU15.
Vehicle for tank carriage (JT/T 617)	: FL.
Transport category (JT/T 617)	: 2.
Tunnel restriction code (JT/T 617)	: D/E.
Special provisions for carriage - Loading, unloading and handling (JT/T 617)	: CV13, CV28.
Special provisions for carriage - Operation (JT/T 617)	: S2, S19.
Hazard identification number (JT/T 617)	: 336.
Orange-coloured plate (JT/T 617)	:



UN RTDG

Special provisions (UN RTDG)	: 279.
Limited quantities (UN RTDG)	: 1L.
Excepted quantities (UN RTDG)	: E2.
Packing instruction (UN RTDG)	: P001, IBC02.
Portable tank and bulk container special instructions (UN RTDG)	: T7.
Portable tank and bulk container special	: TP2.

provisions (UN RTDG)

Transport by sea

Special provisions (IMDG)	: 279.
Limited quantities (IMDG)	: 1 L.
Excepted quantities (IMDG)	: E2.
Packing instructions (IMDG)	: P001.
IBC packing instructions (IMDG)	: IBC02.
Tank instructions (IMDG)	: T7.
Tank special provisions (IMDG)	: TP2.
Stowage category (IMDG)	: B.
Flash point (IMDG)	: 12° C c.c.
Properties and observations (IMDG)	: Colourless, volatile liquid. Flashpoint: 11° C c.c. Explosive limits: 5.5% to 36.5% Miscible with water. Toxic if swallowed; may cause blindness. Avoid skin contact.

Air transport

PCA Excepted quantities (IATA)	: E2.
PCA Limited quantities (IATA)	: Y341.
PCA limited quantity max net quantity (IATA)	: 1L.
PCA packing instructions (IATA)	: 352.
PCA max net quantity (IATA)	: 1L.
CAO packing instructions (IATA)	: 364.
CAO max net quantity (IATA)	: 60L.
Special provisions (IATA)	: A113.
ERG code (IATA)	: 3L.

Inland waterway transport

Classification code (ADN)	: FT1.
Special provisions (ADN)	: 279, 802.
Limited quantities (ADN)	: 1 L.
Excepted quantities (ADN)	: E2.
Equipment required (ADN)	: PP, EP, EX, TOX, A.
Ventilation (ADN)	: VE01, VE02.
Number of blue cones/lights (ADN)	: 2

Rail transport

Special provisions (RID)	: 279.
Limited quantities (RID)	: 1L.
Excepted quantities (RID)	: E2.
Packing instructions (RID)	: P001, IBC02.
Mixed packing provisions (RID)	: MP19.
Portable tank and bulk container instructions (RID)	: T7.

Portable tank and bulk container special provisions (RID) : TP2.
Tank codes for RID tanks (RID) : L4BH.
Special provisions for RID tanks (RID) : TU15.
Transport category (RID) : 2.
Special provisions for carriage - Loading, unloading and handling (RID) : CW13, CW28.
Colis express (express parcels) (RID) : CE7.
Hazard identification number (RID) : 336.

SECTION 15 Regulatory information

New Chemical Substance Environmental Management Registration Measures (MEE Order 12 of 2020)

Inventory of Existing Chemical Substances in China (IECSC) : Listed

Regulations on the Safe Management of Hazardous Chemicals (Decree 591 of the State Council)

Catalogue of Hazardous Chemicals (2015) : Listed

Other domestic regulatory lists

Dangerous Goods List (GB 12268-2012) : Listed

SECTION 16 Other information

Revision information : Initial preparation date: June 15, 2021

Last revision date: September 27, 2022

Version: 2.0

Data sources : ECHA reference

LOLI

Catalogue of Hazardous Chemicals (2015)

Abbreviations and acronyms

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
LC50	Median lethal concentration
LD50	Median lethal dose
EC50	Median effective concentration
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet

Training advice : Normal use of this product shall imply use in accordance with the instructions on the packaging

Other information : No information available

Safety Data Sheet (SDS), China

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