

# SAFETY DATA SHEET

This safety data sheet complies with the requirements of: \$\$586: 2008 (2014)

Issuing Date 02-Dec-2013 Revision Date 09-Feb-2023 Revision Number 2.1

# SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product Name Methanol

Other means of identification

UN proper shipping name METHANOL

**Description** UN1230, METHANOL, 3 (6.1), II

**CAS No** 67-56-1

**Synonyms** Methyl alcohol, wood alcohol, methyl hydroxide

Pure substance/mixture Substance

**Contains Methanol** 

Molecular weight 32.04

Other information Chemical Family - Alcohols

Recommended use of the chemical and restrictions on use

**Recommended use** Industrial use, Professional use, Consumer use:

Solvent Fuels Raw material Cleaning agent Laboratory reagent

Use in oil and gas field drilling and production operations

Water treatment chemicals, wastewater Consumer use of cleaning agents and de-icers

Uses advised against None known

### Details of the supplier of the safety data sheet

# <u>Supplier</u>

Methanex Asia Pacific Ltd Unit 3802, The Lee Gardens, 33 Hysan Avenue, Causeway Bay, Hong Kong

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For further information, please contact

Emergency telephone number

Emergency telephone Carechem 24 International: +65 3165 2217

(M)SDS Number UL-METHANOL-SG

## SECTION 2: Hazards identification

### GHS Classification

Flammable liquids	Category 2
Acute toxicity - Oral	Category 3
Acute toxicity - Dermal	Category 3
Acute toxicity - Inhalation (Vapors)	Category 3
Specific target organ toxicity (single exposure)	Category 1

#### Label elements



# Signal word

Danger

Contains Methanol

### **Hazard statements**

H225 - Highly flammable liquid and vapor

H301 - Toxic if swallowed

H311 - Toxic in contact with skin

H331 - Toxic if inhaled

H370 - Causes damage to organs

### **Precautionary Statements - Prevention**

Keep container tightly closed

Keep cool

Ground and bond container and receiving equipment

Use explosion-proof electrical/ ventilating/ lighting/ equipment

Take action to prevent static discharges

Do not breathe dust/fume/gas/mist/vapors/spray

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Use only outdoors or in a well-ventilated area

Wear protective gloves/clothing and eye/face protection

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

### **Precautionary Statements - Response**

Specific treatment (see label)

IF exposed or concerned: Call a POISON CENTER or doctor

IF ON SKIN: Wash with plenty of water and soap

Take off immediately all contaminated clothing and wash it before reuse

Call a doctor if you feel unwell

IF INHALED: Remove person to fresh air and keep comfortable for breathing

Call a doctor

IF SWALLOWED: Immediately call a doctor

Rinse mouth

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

#### **Precautionary Statements - Storage**

Store locked up

Store in a well-ventilated place. Keep container tightly closed

### **Precautionary Statements - Disposal**

Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

### Other hazards which do not result in classification

Risk of blindness after swallowing the product Harmful to aquatic life

# SECTION 3: Composition/information on ingredients

Substance

**CAS No** 67-56-1

Synonyms Methyl alcohol, wood alcohol, methyl hydroxide

Chemical name	EC No (EU Index No)	CAS No	Weight-%
Methanol	200-659-6	67-56-1	100

## SECTION 4: First aid measures

### **Description of first aid measures**

**General advice** Show this safety data sheet to the doctor in attendance. Immediate medical attention is

required.

**Inhalation** Remove to fresh air. IF exposed or concerned: Get medical advice/attention. If breathing

has stopped, give artificial respiration. Get medical attention immediately. Immediate medical attention is required. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained

personnel should) give oxygen.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep

eye wide open while rinsing. Do not rub affected area. Get immediate medical attention.

Skin contact Remove/Take off immediately all contaminated clothing. Wash off immediately with soap

and plenty of water while removing all contaminated clothes and shoes. Get immediate

medical attention.

**Ingestion** Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious

person. Get immediate medical attention.

### Most important symptoms and effects, both acute and delayed

**Symptoms** Exposure may cause nausea, weakness and central nervous system effects, headache,

vomiting, dizziness, symptoms of drunkenness. Coma and death due to respiratory failure may follow severe exposures: Medical treatment necessary. A latent period of several hours may occur between exposure and the onset of symptoms. May cause blindness.

For emergency responders

**Self-protection of the first aider** Remove all sources of ignition. Ensure that medical personnel are aware of the material(s)

involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory

medical device. Do not breathe vapor or mist.

### Indication of any immediate medical attention and special treatment needed

Note to physicians

The severity of outcome following methanol ingestion may be more related to the time between ingestion and treatment, rather than the amount ingested; therefore, there is a need for rapid treatment of any ingestion exposure. Call a Poison Center. Antidote: Fomepizole enhances elimination of metabolic formic acid. Antidote should be administered by qualified medical personnel.

# SECTION 5: Firefighting measures

### **Suitable Extinguishing Media**

Suitable Extinguishing Media Us

Use water spray to cool fire-exposed containers. Water will not cool methanol below its flash point. Dry chemical. Carbon dioxide (CO2). Water spray. Alcohol resistant foam. Dry sand.

Unsuitable extinguishing media

Do not use straight streams. Do not scatter spilled material with high pressure water streams.

### Specific hazards arising from the chemical

Specific hazards arising from the chemical

Mixtures >20% methanol with water: flammable. Highly flammable liquid and vapor. Vapors are heavier than air and may spread along floors. Risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Methanol: Burns with invisible flame. Flame may not be visible in daylight. Cool containers with flooding quantities of water until well after fire is out.

**Hazardous combustion products** 

Toxic gases or vapors, Carbon monoxide, Carbon dioxide (CO2), Formaldehyde.

### Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters

Cool containers with flooding quantities of water until well after fire is out. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

### SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

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Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Do not breathe

vapor or mist.

Other information Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

**Environmental precautions** 

Personal precautions

**Environmental precautions** Avoid release to the environment. Dispose of contents/containers in accordance with local

regulations. Biodegradable at low concentrations. Soluble in water. When released, this product is expected to evaporate. Contact authorities in the event of pollution of soil and aquatic environment or discharge into drains. Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Prevent product from

entering drains.

### Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapor

suppressing foam may be used to reduce vapors. Dike far ahead of spill to collect runoff water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other

non-combustible material and transfer to containers for later disposal.

Methods for cleaning up Take precautionary measures against static discharges. Dike far ahead of liquid spill for

later disposal. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Small spill: Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Use non-sparking tools. Collect spillage. Large spill: Dike far ahead of spill: use dry sand to contain the flow of material.

Use clean non-sparking tools to collect absorbed material.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Reference to other sections Safe handling: see Section 7. Personal protection equipment (PPE): see Section 8.

Disposal: see Section 13.

# SECTION 7: Handling and storage

### Precautions for safe handling

Advice on safe handling

Handle in accordance with good industrial hygiene and safety practice. Do not enter confined area unless adequately ventilated. Use personal protection equipment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. Avoid contact with skin, eyes or clothing. Take off contaminated clothing and wash before reuse. Do not breathe vapor or mist. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Do not breathe vapor or mist.

### Conditions for safe storage, including any incompatibilities

**Storage Conditions** 

Keep unauthorized personnel away. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations. Keep out of the reach of children. Store locked up.

### SECTION 8: Exposure controls/personal protection

### **Control parameters**

Occupational exposure limits

Chemical name	Singapore	ACGIH TLV
Methanol	PEL: 200 ppm	STEL: 250 ppm
67-56-1	PEL: 262 mg/m <sup>3</sup>	TWA: 200 ppm
	STEL: 250 ppm	S*
	STEL: 328 mg/m <sup>3</sup>	

Other information on limit values

OEL values in accordance with Commission Directive 2000/39/EC of 8 June 2003, as amended, establishing a first list of indicative occupational exposure limit values in the implementation of Council Directive 98/24/EC.

### Biological occupational exposure limits

Chemical name	Singapore	ACGIH
Methanol	No data available	15 mg/L - urine (Methanol) - end of
67-56-1		shift

### **Appropriate engineering controls**

**Engineering controls** Provide local exhaust ventilation. Handle product only in closed system or provide

appropriate exhaust ventilation. Use explosion-proof ventilating equipment. All equipment used when handling the product must be grounded. Ensure that eyewash stations and

safety showers are close to the workstation location.

### Individual protection measures, such as personal protective equipment

**Eye/face protection** Tight sealing safety goggles.

**Skin and body protection** Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

Antistatic boots.

**Hand protection** Wear suitable gloves. Impervious gloves. Butyl rubber.

**Respiratory protection** Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or

other positive-pressure mode. Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards

of the product and the safe working limits of the selected respirator

**Environmental exposure controls** Avoid release to the environment. Prevent entry into waterways, sewers, basements or

confined areas.

## SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance Clear liquid
Physical state Liquid
Color Clear

Odor Alcohol.
Odor threshold 4.2 - 5960 ppm

 Values
 Remarks
 • Method

 pH
 No data available

pH No data available

Melting point / freezing point -97.8 °C No data available

Initial boiling point and boiling 64.7 °C No data available

range

Flash point11 °CNo data availableEvaporation rate4.1Butyl acetate = 1FlammabilityNo data available

Flammability Limit in Air

**Upper flammability or explosive** 36.5% No data available

limits

**Lower flammability or explosive** 5.5% No data available

limits

**Vapor pressure** 12.8 kPa @ 20 °C

**Vapor density** 1.1 @ 20 °C (air = 1)

**Relative density** 0.791 - 0.793 @20°C

Water solubilityMiscible in waterNo data availableSolubility(ies)No data available

Partition coefficient -0.77 log Pow

Autoignition temperature464 °CNo data availableDecomposition temperatureNo data available

Kinematic viscosity

No data available

**Dynamic viscosity** 0.8 cP @ 20 °C **Explosive properties** Vapors may form explosive mixtures with air.

Oxidizing properties No information available.

Other information No information available

Molecular weight32.04VOC content100%

# SECTION 10: Stability and reactivity

### Reactivity

**Reactivity** Containers may rupture or explode if exposed to heat.

**Chemical stability** 

Stability Stable under normal conditions. May form flammable/explosive vapor-air mixture.

Hygroscopic.

**Explosion data** 

Sensitivity to mechanical impact None.
Sensitivity to static discharge Yes.

Possibility of hazardous reactions None under normal processing.

**Conditions to avoid** 

Conditions to avoid Heat, flames and sparks. Excessive heat. Containers may rupture or explode if exposed to

heat.

Incompatible materials

Incompatible materials Lead, Aluminum, Zinc, Oxidizing agent, Strong acids, Strong bases, Polyethylene, Polyvinyl

chloride (PVC), Nitriles.

### Hazardous decomposition products

Hazardous decomposition products Carbon monoxide, Carbon dioxide (CO2), Formaldehyde.

# SECTION 11: Toxicological information

#### Information on likely routes of exposure

### **Product Information**

**Inhalation** Toxic by inhalation.

**Eye contact** May cause irritation.

**Skin contact** Toxic in contact with skin.

Ingestion Toxic if swallowed. MAY BE FATAL OR CAUSE BLINDNESS IF SWALLOWED.

### Symptoms related to the physical, chemical and toxicological characteristics

**Symptoms** 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: Medical treatment necessary. A latent period of several hours may occur between exposure and the onset of symptoms. May cause blindness.

### **Acute toxicity**

### **Numerical measures of toxicity**

Acute Toxicity Estimate (ATE) values provided as a reflection of the hazard classification.

### The following values are calculated based on chapter 3.1 of the GHS document:

 ATEmix (oral)
 100 mg/kg

 ATEmix (dermal)
 300 mg/kg

 ATEmix (inhalation-vapor)
 3 mg/l

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Methanol	= 6200 mg/kg (Rat)	= 15840 mg/kg (Rabbit)	= 22500 ppm (Rat) 8 h
			= 64000 ppm (Rat) 4 h

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Skin corrosion/irritation**May cause skin irritation. Based on available data, the classification criteria are not met.

**Serious eye damage/eye irritation** May cause mild to moderate irritation.

**Respiratory or skin sensitization** No information available.

**Germ cell mutagenicity** No information available.

**Carcinogenicity** Contains no ingredient listed as a carcinogen.

**Reproductive toxicity** No information available.

**STOT - single exposure** Causes damage to organs. Target Organs: Central nervous system, Optic nerve.

**STOT - repeated exposure** No information available.

**Aspiration hazard** No information available.

# SECTION 12: Ecological information

### **Ecotoxicity**

**Ecotoxicity** Avoid release to the environment. Harmful to aquatic life.

Chemical name	Algae/aquatic plants	Fish	Crustacea
Methanol	-	LC50: =28200mg/L (96h,	-

Pimephales promelas)
LC50: >100mg/L (96h,
Pimephales promelas)
LC50: 19500 - 20700mg/L (96h,
Oncorhynchus mykiss)
LC50: 18 - 20mL/L (96h,
Oncorhynchus mykiss)
LC50: 13500 - 17600mg/L (96h,
Lepomis macrochirus)

Persistence and degradability

Persistence and degradability Readily biodegradable.

**Bioaccumulative potential** 

Bioaccumulation Not expected to bioaccumulate

**Bioconcentration factor (BCF)** <10

**Component Information** 

Chemical name	Partition coefficient
Methanol	-0.77

### **Mobility**

Mobility in soil Adsorbs on soil.

PBT and vPvB assessment No information available.

Chemical name	PBT and vPvB assessment	
Methanol	The substance is not PBT / vPvB PBT assessment does	
	not apply Further information relevant for the PBT	
	assessment is necessary	

### Other adverse effects

Other adverse effects No information available

# **SECTION 13: Disposal considerations**

### Waste treatment methods

Waste from residues/unused

products

Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of

waste in accordance with environmental legislation.

**Contaminated packaging**Recover or recycle if possible. Empty containers pose a potential fire and explosion hazard.

Do not cut, puncture or weld containers.

## **SECTION 14: Transport information**

ADR

UN number or ID number UN1230

UN proper shipping name METHANOL

Transport hazard class(es) 3
Subsidiary class 6.1
Labels 3+6.1
Packing group II
Classification code FT1
Tunnel restriction code (D/E)
Special Provisions 279

**Description** UN1230, METHANOL, 3 (6.1), II

**IMDG** 

UN number or ID number UN1230 UN proper shipping name METHANOL

**Description** UN1230, METHANOL, 3 (6.1), II, (11°C C.C.)

Transport hazard class(es) 3
Subsidiary hazard class 6.1
Packing group II
Marine pollutant NP
Special Provisions 279
EmS-No F-E, S-D

IATA

UN number or ID number UN1230 UN proper shipping name Methanol

**Description** UN1230, Methanol, 3 (6.1), II

Transport hazard class(es) 3
Subsidiary hazard class 6.1
Packing group II
Special Provisions A113
ERG Code 3L

# SECTION 15: Regulatory information

### Safety, health and environmental regulations/legislation specific for the substance or mixture

### <u>Singapore</u>

**Arms and Explosives Act** 

Not applicable.

**Chemical Weapons Prohibition Act** 

Not applicable.

**Control of Vectors and Pesticides Act** 

Not applicable.

#### **Environmental Public Health Act**

Dispose of waste product or used containers according to local regulations.

### Fire Safety (Petroleum and Flammable Materials) Regulations

Verify that license requirements are met.

Chemical name	Regulated	Hazard class
Methanol	SCDMNL1230L2	3

#### Hazardous Waste (Control of Export, Import and Transit) Act

It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Take note that wastes may be subject to export, import, or transit controls pursuant to the Basel convention and/or local regulations implementing the Basel convention.

### Maritime and Port Authority of Singapore (Dangerous Goods, Petroleum and Explosives) Regulations

Regulated. See section 14 for more information.

### **Misuse of Drugs Act**

Not applicable.

### Workplace Safety and Health Act

See section 8 for national exposure control parameters. Comply with the health and safety at work laws.

#### **International Regulations**

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

#### International Inventories

**TSCA** Listed. **DSL/NDSL** Listed. **EINECS/ELINCS** Listed. **ENCS** Listed. **IECSC** Listed. **KECL** Listed. **PICCS** Listed. Listed. AICS

#### Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

## **SECTION 16: Other information**

### Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA TWA (time-weighted average) STEL STEL (Short Term Exposure Limit)

Ceiling Maximum limit value \* Skin designation

### Key literature references and sources for data used to compile the SDS

U.S. Environmental Protection Agency ChemView Database

European Food Safety Authority (EFSA)

EPA (Environmental Protection Agency)

Acute Exposure Guideline Level(s) (AEGL(s))

U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act

U.S. Environmental Protection Agency High Production Volume Chemicals

Food Research Journal

Hazardous Substance Database

International Uniform Chemical Information Database (IUCLID)

Japan GHS Classification

Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)

NIOSH (National Institute for Occupational Safety and Health)

National Library of Medicine's ChemID Plus (NLM CIP)

National Toxicology Program (NTP)

New Zealand's Chemical Classification and Information Database (CCID)

Organization for Economic Co-operation and Development Environment, Health, and Safety Publications

Organization for Economic Co-operation and Development High Production Volume Chemicals Program

Organization for Economic Co-operation and Development Screening Information Data Set

World Health Organization

### Label elements

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor

P321 - Specific treatment (see supplemental first aid instructions on this label)

P370 + P378 - In case of fire: Use dry chemical, CO2, water spray or alcohol-resistant foam to extinguish

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

Issuing Date 05-Dec-2013

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Revision Note Updated format.

This safety data sheet complies with the requirements of: SS586: 2008 (2014)

#### Disclaimer

The information above is believed to be accurate and represents the best information currently available to us. Users should make their own investigations to determine the suitability of the information for their particular purposes. This document is intended as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Methanex Corporation and its subsidiaries make no representations or warranties, either express or implied, including without limitation any warranties of merchantability, fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers. Accordingly, Methanex Corp. will not be responsible for damages resulting from use of or reliance upon this information.

**End of Safety Data Sheet**