

## Safety Data Sheet

Material Name: Methanol

SDS ID: Methanol-SG

### SECTION 1: Identification

#### Product identifier

##### Material Name

Methanol

##### Synonyms

Methyl alcohol, wood alcohol, methyl hydroxide

##### Chemical Family

Alcohols

##### Product Use

Industrial use: Manufacture of substance. Distribution of substance. Formulation & (re)packing of substances and mixtures. Use as a fuel. Use in cleaning agents. Use as laboratory reagent. Water treatment chemicals, wastewater. Professional use: Use as a fuel. Use in cleaning agents. Use as laboratory reagent. Use in oil and gas field drilling and production operations. Consumer use: Consumer use of cleaning agents and de-icers: Spray, liquid products. Consumer use of fuels.

##### Restrictions on Use

None identified

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

Methanex Asia Pacific Ltd  
Unit 3802, The Lee Gardens,  
33 Hysan Avenue, Causeway Bay, Hong Kong  
Phone: +852-2918-1398  
Fax: +852-2918-1331

##### Emergency phone number

CHEMTREC Emergency Centre tel.: 65-31581349 (local), 800-101-2201 (toll-free). NCEC: +44 (0) 1235 239 670 (24h/7d)

### SECTION 2: Hazards identification

#### Singapore Standard SS 586-2:2014

Flammable Liquids - Category 2

Acute Toxicity - Oral - Category 3

Acute Toxicity - Dermal - Category 3

Acute Toxicity - Inhalation - Vapor - Category 3

Serious Eye Damage/Eye Irritation - Category 2

Reproductive Toxicity - Category 1B

Specific Target Organ Toxicity - Single Exposure - Category 1 ( optic nerve , central nervous system , retina , systemic toxicity , eyes )

Specific Target Organ Toxicity - Single Exposure - Category 3

#### Label elements

#### Hazard symbols

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### Signal word

Danger

### Hazard statements

- H225 Highly flammable liquid and vapor.
- H301 Toxic if swallowed.
- H311 Toxic in contact with skin.
- H331 Toxic if inhaled.
- H319 Causes serious eye irritation.
- H360 May damage fertility or the unborn child.
- H370 Causes damage to organs.
- H336 May cause drowsiness or dizziness.

### Precautionary statements

#### Prevention

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P233 Keep container tightly closed.
- P210 Keep away from heat/sparks/open flame/hot surfaces - No smoking.
- P240 Ground/Bond container and receiving equipment.
- P241 Use explosion-proof electrical/ventilating/lighting equipment.
- P243 Take precautionary measures against static discharge.
- P242 Use only non-sparking tools.
- P271 Use only outdoors or in a well-ventilated area.
- P281 Use Personal Protective equipment as required.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P260 Do not breathe dust/fume/gas/mist/vapours/spray.
- P264 Wash thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.

#### Response

- P370+P378 In case of fire: Use appropriate media to extinguish.
- P308+P311 If exposed or concerned: Call a POISON CENTER or doctor/physician.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P361+P364 Take off immediately all contaminated clothing and wash it before reuse.
- P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
- P330 Rinse mouth.
- P311 Call a POISON CENTER or doctor.
- P321 Specific treatment (see label).

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**Storage**

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

**Disposal**

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

**Statement(s) of Unknown Acute Toxicity**

Dermal 0% of the mixture consists of ingredient(s) of unknown acute toxicity.  
 Oral 0% of the mixture consists of ingredient(s) of unknown acute toxicity.  
 Inhalation 0% of the mixture consists of ingredient(s) of unknown acute toxicity.

**Other Hazards Which Do Not Result in Classification**

If swallowed there is a risk of blindness.

**SECTION 3: Composition / information on ingredients**

CAS	Component Name	Percent
67-56-1	Methanol	100

**Impurities and stabilizing additives contributing to the GHS Classification**

None

**SECTION 4: First aid measures**

**Inhalation**

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Administer oxygen if breathing is difficult. Immediately call a POISON CENTER or doctor.

**Skin contact**

IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Wash with plenty of water. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse.

**Eye contact**

IF IN EYES: Immediately flush eyes with water for at least 15 minutes, while holding eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation develops and persists, get medical attention.

**Ingestion**

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Seek medical attention immediately.

**Most Important Symptoms/Effects**

**Acute**

Poison. May be fatal if swallowed. If swallowed there is a risk of blindness. Toxic if swallowed, in contact with skin or if inhaled. 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.

**Delayed**

May damage fertility or the unborn child.

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

Treat symptomatically and supportively. 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

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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**

#### **Flammable Properties**

Highly flammable liquid and vapor.

#### **Suitable extinguishing media**

Carbon dioxide, regular dry powder, water spray, alcohol resistant foam, sand. Use water spray to cool fire fire-exposed containers. Water will not cool methanol below its flash point. Collect spillage.

#### **Unsuitable Extinguishing Media**

Do not use high-pressure water streams.

#### **Special Hazards Arising from the Chemical**

Highly flammable liquid and vapor. Mixtures >20% methanol with water: flammable. May form explosive mixture with air. Vapors are heavier than air and may travel along the ground to some distant source of ignition and flash back. Containers may rupture or explode if exposed to heat. Dangerous gases may accumulate in confined spaces. Toxic.

#### **Hazardous combustion products**

Releases toxic gases, vapors. Carbon monoxide, carbon dioxide, formaldehyde.

#### **Fire Fighting Measures**

Do not allow run-off from fire-fighting to enter drains or water courses. Keep unnecessary people away, isolate hazard area and deny entry.

#### **Special Protective Equipment and Precautions for Firefighters**

Wear full protective firefighting gear including self-contained breathing apparatus (SCBA) for protection against possible exposure.

### **SECTION 6: Accidental release measures**

#### **Personal precautions, protective equipment and emergency procedures**

Wear appropriate personal protective equipment. Move container from fire area if it can be done without risk. Do not breathe gas/fume/vapour/spray. Avoid contact with eyes and skin.

#### **Environmental precautions**

Avoid release to the environment. 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. Dispose in accordance with all applicable federal, state/regional and local laws and regulations.

#### **Methods and Materials for Containment and Cleaning Up**

Wear suitable protective clothing and eye/face protection. Stop leak if this can be done without risk. Do not touch or walk through spilled material. Evacuate the area promptly and keep upwind of the spilled material. Ensure adequate ventilation. Avoid inhalation of mists or vapors. Avoid contact with eyes, skin and clothing. Remove all sources of ignition. Avoid friction, static electricity and sparks. Small spills: Absorb with sand or other non-combustible material. Use non-sparking tools and equipment. Collect spilled material in appropriate container for disposal. Clean contaminated surface thoroughly. Large spills: Contain the released material by diking the containment area with absorbent. A vapor suppressing foam may be used to reduce vapors. Collect spilled material in appropriate container for reuse or disposal.

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**SECTION 7: Handling and storage**

**Precautions for safe handling**

Use in a well ventilated area. Wear personal protective clothing and equipment, see Section 8. Eliminate all sources of ignition. No smoking. Do not enter confined spaces unless adequately ventilated. Clean up contamination/spills as soon as they occur. Decontaminate personnel, spill area and all tools and equipment. Use explosion-proof equipment. Use good industrial hygiene practices in handling this material. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and leaving work. Empty containers may contain residual amounts of this product; therefore, empty containers should be handled with care. Do not breathe vapor.

**Conditions for safe storage, including any incompatibilities**

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

Keep cool.

Store locked up.

Keep/Store only in original container. Keep out of direct sunlight, and away from heat, water, and incompatible materials. Ground/Bond container and receiving equipment. Provide appropriate fire extinguishers and spill cleanup equipment in or near storage area. Store at room temperature. Store in a dry area. Store in fireproof room. Keep unauthorized personnel away.

**Incompatible Materials**

Lead, Aluminum, zinc, oxidizing agents, strong acids, strong bases, polyethylene, PVC (Polyvinyl chloride), nitrile

**SECTION 8: Exposure controls/personal protection**

**Exposure Guidelines**

**Component Exposure Limits**

<b>Methanol</b>	<b>67-56-1</b>
Singapore:	200 ppm PEL ; 262 mg/m3 PEL
	250 ppm STEL ; 328 mg/m3 STEL
	22875 mg/m3
ACGIH:	200 ppm TWA
	250 ppm STEL
	Skin - potential significant contribution to overall exposure by the cutaneous route

**Biological limit value**

ACGIH:	15 mg/l Medium: urine Time: end of shift Parameter: Methanol (background, nonspecific )
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**Engineering controls**

Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits. Use explosion-proof electrical/ventilating/lighting equipment. Handle substance within a closed system. Ground/Bond container and receiving equipment. Maintain eye wash fountain and quick-drench shower in work area.

**PERSONAL PROTECTIVE EQUIPMENT**

**Eye/face protection**

Wear splash resistant safety goggles with a faceshield.

**Glove Recommendations**

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Wear appropriate chemical resistant 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. 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.

**SECTION 9: Physical and chemical properties**

Appearance	clear	Physical State	liquid
Odor	alcohol odor	Color	colorless
Odor Threshold	4.2 - 5960 ppm	pH	Not applicable
Melting Point	-97.8 °C	Boiling Point	64.7 °C
Boiling Point Range	Not available	Freezing point	-97.6 °C
Evaporation Rate	4.1 (butyl acetate = 1 )	Flammability (solid, gas)	Not applicable
Autoignition Temperature	464 °C	Flash Point	11 °C
Lower Explosive Limit	5.5 %	Decomposition temperature	Not available
Upper Explosive Limit	36.5 %	Vapor Pressure	12.8 kPa (@ 20 °C )
Vapor Density (air=1)	1.1 (@ 20 °C )	Specific Gravity (water=1)	792 kg/m <sup>3</sup>
Water Solubility	Not available	Partition coefficient: n-octanol/water	-0.77 (log value)
Viscosity	0.8 cP (20 °C, dynamic )	Kinematic viscosity	Not available
Solubility (Other)	Not available	Density	0.791 - 0.793 at 20 °C
VOC	100 %	Molecular Weight	32.04 (g/mol )
Critical Temperature	239.4 °C	Oxidising properties	Not oxidising
Explosive properties	Vapors may form explosive mixtures with air		

**Solvent Miscibility**

**Miscible**

Miscible with water.

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### SECTION 10: Stability and reactivity

#### Reactivity

Containers may rupture or explode if exposed to heat.

#### Chemical stability

Stable under normal conditions of use. In use may form flammable/explosive vapour-air mixture. Product is hygroscopic.

#### Possibility of hazardous reactions

Will not polymerize.

#### Conditions to avoid

Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat.

#### Materials to Avoid (Incompatibilities)

Lead, Aluminum, zinc, oxidizing agents, strong acids, strong bases, polyethylene, PVC (Polyvinyl chloride), nitrile

#### Hazardous decomposition products

Heat, carbon monoxide, carbon dioxide, flammable gases, formaldehyde

### SECTION 11: Toxicological information

#### Information on Likely Routes of Exposure

##### Inhalation:

May cause headache, nausea, dizziness, loss of coordination, central nervous system depression, respiratory tract irritation, sensitivity to light, and/or blurred vision. 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.

##### Skin contact

Harmful in contact with skin.

##### Eye contact

Causes serious eye irritation.

##### Ingestion

Poison. May be fatal if swallowed. If swallowed there is a risk of blindness.

##### Acute and Chronic Toxicity

Poison. Toxic if swallowed, in contact with skin or if inhaled. If swallowed there is a risk of blindness.

##### Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

##### Methanol (67-56-1)

Oral LD50 Rat 5600 mg/kg

Dermal LD50 Rabbit 15800 mg/kg

Inhalation LC50 Rat 64000 ppm 4 h

##### Acute Toxicity Estimate

No data available.

##### Immediate Effects

Poison. Toxic if swallowed, in contact with skin or if inhaled. May be fatal if swallowed. If swallowed there is a risk of blindness. Causes serious eye irritation. Causes damage to organs. Ingestion causes nausea, weakness and central nervous system effects, headache, vomiting, dizziness, symptoms of drunkenness, respiratory tract irritation. 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.

##### Delayed Effects

May damage fertility or the unborn child.

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**Irritation/Corrosivity Data**

May cause irritation to eyes, skin and respiratory tract.

**Respiratory Sensitization**

No data available.

**Dermal Sensitization**

No data available.

**Carcinogenicity**

**Component Carcinogenicity**

None of this product's components are listed by ACGIH, IARC, NTP, DFG or OSHA

**Mutagenic Data**

No data available.

**Reproductive Effects Data**

No data available.

**Specific Target Organ Toxicity - Single Exposure**

optic nerve, central nervous system

**Specific Target Organ Toxicity - Repeated Exposure**

No target organs identified.

**Aspiration hazard**

No data available.

**Medical Conditions Aggravated by Exposure**

skin disorders, eye disorders, respiratory disorders, kidney disorders, liver disorders

**SECTION 12: Ecological information**

**Ecotoxicity**

Avoid release to the environment.

**Component Analysis - Aquatic Toxicity**

<b>Methanol</b>	<b>67-56-1</b>
Fish:	LC50 96 h Pimephales promelas 28200 mg/L [flow-through ]; LC50 96 h Pimephales promelas >100 mg/L [static ]; LC50 96 h Oncorhynchus mykiss 19500 - 20700 mg/L [flow-through ]; LC50 96 h Oncorhynchus mykiss 18 - 20 mL/L [static ]; LC50 96 h Lepomis macrochirus 13500 - 17600 mg/L [flow-through ]
Algae:	EC50 72 hr Selenastrum capricornutum 22000 mg/l
Invertebrate:	EC50 48 hr Daphnia >10000 mg/l

**Persistence**

Rapidly degradable.

**Bioaccumulative potential**

Bioconcentration Factor (BCF): < 10

**Mobility**

mobile

**Other adverse effects**

None



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### SECTION 13: Disposal considerations

#### Disposal Methods

Dispose in accordance with all applicable federal, state/regional and local laws and regulations.

#### Component waste information

There is no applicable waste information for this product's components.

#### Contaminated packaging disposal

Dispose in accordance with all applicable regulations.

### SECTION 14: Transport information

#### IATA Information:

Shipping Name: METHANOL

Hazard Class: 3

UN#: UN1230

Packing Group: II

Required Label(s): 3, 6.1

#### ICAO Information:

Shipping Name: METHANOL

Hazard Class: 3

UN#: UN1230

Packing Group: II

Required Label(s): 3, 6.1

#### IMDG Information:

Shipping Name: METHANOL

Hazard Class: 3

UN#: UN1230

Packing Group: II

Required Label(s): 3, 6.1

#### Component Marine Pollutants (IMDG)

Not a marine pollutant.

#### International Bulk Chemical Code

This material contains one or more of the following chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

Methanol	67-56-1
IBC Code:	Category Y

#### Special precautions

None



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### SECTION 15: Regulatory information

**Singapore Regulations**

**List of Hazardous Substances**

No information was found for the substance(s) on the List of Hazardous Substances.

**Poisons List**

No information was found for the substance(s) on the List of Hazardous Substances.

**Hazardous Substance Transport Quantities**

None of this product's components are on the list.

**Maritime and Port Authority**

This product contains no components identified on Singapore's Maritime and Port Authority - Dangerous Goods.

**Arms and Explosives Act**

None of this product's components are on the list.

**Schedule of Chemical Weapons**

None of this product's components are on the list.

**Misuse of Drugs Act**

None of this product's components are on the list.

**Petroleum and Flammable Materials**

<b>Methanol</b>	<b>67-56-1</b>
Hazard Classes	3
<b>Methanol</b>	<b>67-56-1</b>
Regulated Products	SCDMNL1230L2

**Strategic Goods Control**

This product contains no components identified on Singapore's Strategic Goods Control.

**Toxic Industrial Wastes**

This product contains no components identified on Singapore's Toxic Industrial Wastes.

**Component Analysis - Inventory**

**Methanol (67-56-1)**

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2	KR - REACH CCA	CN	NZ	MX	TW
Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes

### SECTION 16: Other information

**NFPA Ratings**

Health: 1 Fire: 3 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

**Preparation and Revision Date**

Previous Version: 12/5/2013; Updated: 06/26/2017

**Key / Legend**

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CA/MA/MN/NJ/PA -

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California/Massachusetts/Minnesota/New Jersey/Pennsylvania\*; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CFR - Code of Federal Regulations (US); CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EC - European Commission; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; ISHL - Japan Industrial Safety and Health Law; IUCLID - International Uniform Chemical Information Database; JP - Japan; Kow - Octanol/water partition coefficient; KR KECI Annex 1 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR KECI Annex 2 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL), KR - Korea; LD50/LC50 - Lethal Dose/Lethal Concentration; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MX - Mexico; NDSL - Non-Domestic Substance List (Canada); NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PEL - Permissible Exposure Limit; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH - Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TCCA - Korea Toxic Chemicals Control Act; TDG - Transportation of Dangerous Goods; TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TW - Taiwan; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; VLE - Exposure Limit Value (Mexico); WHMIS - Workplace Hazardous Materials Information System (Canada).

### **Other Information**

#### **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.