



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
Notification of MOI Subject: Hazard Classification and Communication System of
Hazardous Substances B.E. 2555 (2012)

Issuing Date 26-Jun-2017

Revision Date 15-Jun-2022

Revision Number 2

1. Identification

Product identifier

Product Name Methanol

Other means of identification

UN/ID no UN1230

Synonyms Methyl alcohol, wood alcohol, methyl hydroxide

Molecular weight 32.04

Registration Number(s) No information available

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

Restrictions on use None known.

Other information

Chemical Family - Alcohols

Supplier's details

Manufacturer

Methanex Methanol Company
5850 Granite Parkway Suite 400
Plano, TX 75024, USA
Tel: +1 972 702 0909
Fax: +1 972 233 1266

Atlas Methanol Company Unlimited
Point Lisas Industrial Estate, Point Lisas
Republic of Trinidad and Tobago
Tel: +1 868 679 4400
Fax: +1 868 679 2400

Methanex New Zealand Limited
409 Main North Road, SH3, Motunui
Private Bag 2011
New Plymouth 4342, New Zealand
Phone: +64 (6) 7549700

Emergency telephone number

Emergency telephone NCEC: 001 800 120 666 751 (toll-free, access from Thailand only)

2. Hazard(s) identification

Classification of the substance or mixture

Acute toxicity - Oral	Category 3
Acute toxicity - Dermal	Category 3
Acute toxicity - Inhalation (Vapors)	Category 3
Serious eye damage/eye irritation	Category 2A
Reproductive toxicity	Category 1B
Specific target organ toxicity (single exposure)	Category 1, Category 3
Specific target organ toxicity (repeated exposure)	Category 1
Acute aquatic toxicity	Category 3
Flammable liquids	Category 2

GHS Label elements, including precautionary statements



Signal word

Danger

Hazard statements

Highly flammable liquid and vapor.
Toxic if swallowed.
Toxic in contact with skin.
Toxic if inhaled.
Causes serious eye irritation.
May damage fertility or the unborn child.
Causes damage to organs.
May cause drowsiness or dizziness.
Causes damage to organs through prolonged or repeated exposure.
Harmful to aquatic life.

Precautionary Statements - Prevention

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Use personal protective equipment as required.
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.
Do not breathe dust/fume/gas/mist/vapors/spray.
Avoid release to the environment.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep container closed.
Ground and bond container and receiving equipment.
Use only non-sparking tools.
Take action to prevent static discharges.
Use explosion-proof electrical/ ventilating/ lighting/ equipment.
Keep cool.

Precautionary Statements - Response

Specific treatment (see supplemental first aid instructions on this label).
IF exposed: Call a POISON CENTER or doctor.

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

Skin

Call a POISON CENTER or doctor/physician if you feel unwell.

Wash contaminated clothing before reuse.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

Inhalation

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

Call a POISON CENTER or doctor/physician.

Ingestion

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

Rinse mouth.

Fire

In case of fire: Use CO₂, dry chemical, or foam for extinction.

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.

If medical advice is needed, have product container or label at hand.

Keep out of reach of children.

Read carefully and follow all instructions.

3. Composition/information on ingredients

Substance**Synonyms**

Methyl alcohol, wood alcohol, methyl hydroxide

CAS No

67-56-1

Chemical name	CAS No	Weight-%
Methanol 67-56-1	67-56-1	100

4. First-aid measures

Description of necessary 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.

Skin contact

Wash off immediately with plenty of water for at least 15 minutes. Remove/Take off immediately all contaminated clothing. Get immediate medical attention.

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. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical attention.

Ingestion

Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get immediate medical attention.

For emergency responders**Self-protection of the first aider**

Do not breathe vapor or mist. 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. Avoid contact with skin, eyes or clothing. 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.

Most important symptoms/effects, 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 redness and tearing of the eyes. Burning sensation. Coughing and/ or wheezing. Difficulty in breathing.

Indication of immediate medical attention and special treatment needed, if necessary**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.

5. Fire-fighting measures**Suitable (and unsuitable) extinguishing media****Suitable Extinguishing Media**

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.

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. May burn with an almost invisible flame in bright light.

Hazardous combustion products

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

Special protective equipment and precautions 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.

6. Accidental release measures**Personal precautions, protective equipment and emergency procedures****Personal precautions**

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.

For emergency responders Use personal protection recommended in Section 8.

Environmental 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 Take precautionary measures against static discharge. 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 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: Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

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

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

Reference to other sections Safe handling: see Section 7. Personal protection equipment (PPE): see Section 8. Disposal: see Section 13.

7. Handling and storage

Precautions for safe handling

Advice on safe handling Use according to package label instructions. 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. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Take off contaminated clothing and wash before reuse. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. 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 enter confined area unless adequately ventilated.

Conditions for safe storage, including any incompatibilities

Storage Conditions 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 unauthorized personnel away. Store locked up.

Incompatible materials Lead. Aluminum. Zinc. Oxidizing agent. Strong acids. Strong bases. Polyethylene. Polyvinyl chloride (PVC). Nitriles.

8. Exposure controls/personal protection

Control parameters

Exposure guidelines

Chemical name	Thailand	ACGIH TLV
Methanol 67-56-1	No data available	STEL: 250 ppm TWA: 200 ppm S*

Biological occupational exposure limits

Chemical name	ACGIH
Methanol 67-56-1	15 mg/L - urine (Methanol) - end of shift

Appropriate engineering controls

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

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 must 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.

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

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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
-----------------	---------------	-------------------------

pH		No data available
Melting point / freezing point	-97.8 °C / -144 °F	No data available
Initial boiling point and boiling range	64.7 °C / 148.5 °F	No data available
Flash point	11 °C / 51.8 °F	No data available
Evaporation rate	4.1	Butyl acetate = 1
Flammability		No data available
Upper/lower flammability or explosive limits		
Upper flammability or explosive limits	36.5%	No data available
Lower flammability or explosive limits	5.5%	No data available
Vapor pressure	12.8 kPa	@ 20 °C
Vapor density	1.1	@ 20 °C (air = 1)
Relative density	0.791 - 0.793	@20°C
Solubility(ies)		
Water solubility	Miscible in water	No data available
Solubility in other solvents		No data available
Partition coefficient	-0.77	log Pow
Autoignition temperature	464 °C / 867.2 °F	No data available
Decomposition temperature		No data available
Viscosity		
Kinematic viscosity		No data available
Dynamic viscosity	0.8 cP	@ 20 °C

Other information

Oxidizing properties	No information available.
Explosive properties	Vapors may form explosive mixtures with air.
Softening point	No information available
Molecular weight	32.04
VOC Content (%)	100%
Liquid Density	No information available
Bulk density	No information available

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.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge Yes.

Possibility of hazardous reactions

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). May release flammable gases: Formaldehyde.

11. Toxicological information

Information on the likely routes of exposure

Product Information

Inhalation	Toxic by inhalation. May cause drowsiness or dizziness.
Eye contact	Causes serious eye 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 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 redness and tearing of the eyes. Coughing and/ or wheezing. Difficulty in breathing.

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

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Methanol	= 6200 mg/kg (Rat)	= 15840 mg/kg (Rabbit)	= 22500 ppm (Rat) 8 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	Causes serious eye irritation.
Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	Contains no ingredient listed as a carcinogen.
Reproductive toxicity	Contains a known or suspected reproductive toxin. May damage fertility or the unborn child.

STOT - single exposure	Causes damage to organs. May cause drowsiness or dizziness.
STOT - repeated exposure	Causes damage to organs through prolonged or repeated exposure.
Target organ effects	Central nervous system. Optic nerve.
Aspiration hazard	No information available.

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

Chemical name	Algae/aquatic plants	Fish	Crustacea
Methanol	-	LC50: =28200mg/L (96h, <i>Pimephales promelas</i>) LC50: >100mg/L (96h, <i>Pimephales promelas</i>) LC50: 19500 - 20700mg/L (96h, <i>Oncorhynchus mykiss</i>) LC50: 18 - 20mL/L (96h, <i>Oncorhynchus mykiss</i>) LC50: 13500 - 17600mg/L (96h, <i>Lepomis macrochirus</i>)	-

Persistence and degradability

Readily biodegradable.

Bioaccumulative potential

Bioaccumulation	Not expected to bioaccumulate. BCF: <10.
------------------------	--

Component Information

Chemical name	Partition coefficient
Methanol	-0.77

Mobility

Mobility in soil
Adsorbs on soil.

Other adverse effects
No information available.

13. Disposal considerations

Disposal 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.

14. Transport information

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 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 6.1
Packing group	II
Special Provisions	A113
ERG Code	3L

ADR

UN number or ID number	UN1230
UN proper shipping name	METHANOL
Description	UN1230, METHANOL, 3 (6.1), II
Transport hazard class(es)	3
Subsidiary class	6.1
Packing group	II
Classification code	FT1
Special Provisions	279

15. Regulatory information

Safety, health and environmental regulations specific for the product in question

Thailand - Applicable regulations:

Hazardous Substances Act, B.E. 2535

- Type 1: hazardous substance is that of which the production, import, export, or having in possession must comply with the specified criteria and procedures
- Type 4: hazardous substance is that of which the production, import, export, or having in possession is prohibited
- Substances subject to List 5.6 Groups of chemicals controlled according to their properties: A substance or compound that is not listed by an agency responsible for the control and supervision of production or import shall be in accordance with procedures Methanol - 67-56-1

Hazardous Substances Type 1. DIW (Department of Industrial Works), FDA (Food & Drug Administration).

Hazardous Substances Type 4. FDA (Food & Drug Administration).

Substances subject to List 5.6 Groups of chemicals controlled according to their properties Type 1.

Notification of the Ministry of Industry regarding Hazardous Substances in accordance to chapter 3 Duties and Civil Liabilities B.E. 2538

Chemical name	Hazardous Substances
Methanol - 67-56-1	Listed

Notification of the Ministry of Labor on Prescription of hazardous chemicals which employers must provide health check-ups for employees

Chemical name	Harmful Substances Requiring Workers to Subject to Medical Exams
Methanol - 67-56-1	Listed

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/NDL	Listed.
EINECS/ELINCS	Listed.
ENCS	Listed.
IECSC	Listed.
KECL	Listed.
PICCS	Listed.
AICS	Listed.

Legend:

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

DSL/NDL - 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

16. Other information

Issuing Date 26-Jun-2017

Revision Date 15-Jun-2022

Revision Note Manufacturer information. Change to classification. Updated format. SDS sections updated: 1-16.

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

ACGIH	ACGIH (American Conference of Governmental Industrial Hygienists)
IMDG	International Maritime Dangerous Goods (IMDG)
IATA	International Air Transport Association (IATA)
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road

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

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