SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
ABNT NBR 14725:2023

Issuing Date 22-Sep-2005 **Revision Date** 06-Mar-2024 **Revision Number** 6

1. Identification

Product identifier

Product Name Methanol

Other means of identification

UN/ID no UN1230

Synonyms Methyl alcohol, wood alcohol, methyl hydroxide

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
Consumer use of cleaning agents and de-icers

Restrictions on use None

Details of the supplier of the safety data sheet

Supplier
Methanex Chile SpA (Commercial Office)
Rosario Norte 100, 6° floor
Las Condes, Santiago
CHILE
Tel: + 56 2 2374 4000

Manufacturer
Methanex Corporation
1800 Waterfront Centre
200 Burrard Street, V6C 3M1
Canada
T (604).661.2600

Emergency telephone number

Emergency telephone
CHEMTREC Brazil (Rio De Janeiro): +(55)-2139581449 Portuguese
CHEMTREC Brazil (São Paulo): +(55)-1143491359 Portuguese
CHEMTREC Brazil: 0800 892 0479 Portuguese

2. Hazard(s) identification

GHS Classification

GHS Classification in accordance with ABNT NBR 14725 Standard.

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
Hazardous to the aquatic environment - acute hazard	Category 3

Label elements

Signal word
Danger

Hazard statements
Highly flammable liquid and vapor
Toxic if swallowed, in contact with skin or if inhaled
Causes damage to organs
Harmful to aquatic life

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/clothing and eye/face protection
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray
Avoid release to the environment
Ground and bond container and receiving equipment
Use non-sparking tools
Take action to prevent static discharges
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
Keep container tightly closed
Use explosion-proof electrical/ ventilating/ lighting/ equipment
Keep cool

Precautionary Statements - Response
Specific treatment (see supplemental first aid instructions on this label)
IF exposed or concerned: Call a POISON CENTER or doctor
IF ON SKIN: Wash with plenty of water and soap
Call a POISON CENTER or doctor if you feel unwell
Take off immediately all contaminated clothing and wash it before reuse
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]
IF INHALED: Remove person to fresh air and keep comfortable for breathing
Call a POISON CENTER or doctor
IF SWALLOWED: Immediately call a POISON CENTER or 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 information
Poison. Risk of blindness after swallowing the product.

3. Composition/information on ingredients

Pure substance/mixture Substance.

Substance

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

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 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.

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.

Most important symptoms and effects, both acute and delayed

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. Coughing and/ or wheezing. Difficulty in breathing. May cause blindness.

Effects of Exposure Causes damage to organs: Eyes.

Indication of any immediate medical attention and special treatment needed

Note to physicians Poison. May be fatal if swallowed. 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 Extinguishing Media Dry chemical. Carbon dioxide (CO2). Water spray. Alcohol resistant foam. Use water spray to cool fire-exposed containers. Water will not cool methanol below its flash point.

Unsuitable extinguishing media Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical Highly flammable liquid and vapor. Vapors are heavier than air and may spread along floors. Mixtures >20% methanol with water: flammable. 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. Do not allow run-off from fire-fighting to enter drains or water courses. Sealed containers may rupture when heated. May burn with an almost invisible flame in bright light.

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

Explosive properties

Sensitivity to static discharge Yes.

Sensitivity to mechanical impact None.

Special protective equipment and precautions for fire-fighters Methanol: Burns with invisible flame. Flame may not be visible in daylight. Fires need to be assessed to determine appropriate protocols and safety measures for firefighting, including establishing safe zones, extinguishing media to be used, firefighter protection, and actions to control or extinguish the fire.

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.

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

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. 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.

7. Handling and storage

Precautions for safe handling

Advice on safe handling 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. 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. Do not enter confined area unless adequately ventilated. Handle product only in closed system or provide appropriate exhaust ventilation.

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 out of the reach of children. Store locked up.

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

8. Exposure controls/personal protection

Exposure guidelines

Chemical name	Brazil	ACGIH TLV
Methanol	TWA: 156 ppm TWA: 200 mg/m^3 STEL: 250 ppm Skin	TWA: 200 ppm STEL: 250 ppm Sk*

Biological occupational exposure limits

Chemical name	Brazil	ACGIH
Methanol 67-56-1	15 mg/L - urine (Methanol) - end of shift	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. Ensure that eyewash stations and safety showers are close to the workstation location. Use spark-proof tools and explosion-proof equipment. All equipment used when handling the product must be grounded.

Individual protection measures, such as personal protective equipment

Eye/face protection	Tight sealing safety goggles. Face protection shield.
Hand protection	Wear suitable gloves. Impervious gloves. Nitrile rubber. Neoprene gloves. Butyl rubber.
Skin and body protection	Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. Antistatic boots.
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 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.
Environmental exposure controls	Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.

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

Property	**Values**	**Remarks • Method**
pH		No data available
Melting point / freezing point	-97.78 °C	No data available
Initial boiling point and boiling range	64.72 °C	No data available
Flash point	11 °C	No data available
Evaporation rate	4.1	Butyl acetate = 1
Flammability		No data available
Flammability Limit in Air		
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
Relative vapor density	1.1	@ 20 °C (air = 1)
Relative density	0.791 - 0.793	@20°C
Water solubility	Miscible in water	No data available
Solubility(ies)		No data available
Partition coefficient	-0.77	log Pow
Autoignition temperature	464 °C	No data available
Decomposition temperature		No 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	None known.	

Other information

Softening point	No information available
Molecular weight	32.04
VOC content	100%
Liquid Density	No information available
Bulk density	No information available
Particle characteristics	
Particle Size	No information available
Particle Size Distribution	No information available

10. Stability and reactivity

Reactivity

Reactivity Containers may rupture or explode if exposed to heat.

Sensitivity to static discharge Yes.

Sensitivity to mechanical impact None.

Chemical stability

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

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid

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

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 Poison. 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. Coughing and/ or wheezing. Difficulty in breathing. May cause blindness.

Acute toxicity Toxic if swallowed. Toxic in contact with skin. Toxic by inhalation.

Numerical measures of toxicity
Acute Toxicity Estimate (ATE) values provided as a reflection of the hazard classification. The acute toxicity of methanol varies greatly species to species and has been well documented. Methanol's toxicity is driven by its metabolism and the creation of toxic metabolites. Metabolism within animal species utilized for acute toxicity testing is not an accurate representation of human metabolism. Therefore, positive human evidence outweighs rat and rabbit toxicity values. Animal toxicity values are reported below, but are not appropriate for human health 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 = 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 a known or suspected carcinogen.

Reproductive toxicity No information available.

STOT - single exposure Causes damage to organs.

STOT - repeated exposure No information available.

Target organ effects Central nervous system. Eyes. Optic nerve,

Neurological effects No information available.

Aspiration hazard No information available.

12. Ecological information

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

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	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 Readily biodegradable.

Mobility Contains component(s) that adsorb(s) into the soil.

Bioaccumulation BCF <10.

Component Information

Chemical name	Partition coefficient
Methanol	-0.77

13. Disposal considerations

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
Transport hazard class(es) 3
Subsidiary hazard class 6.1
Packing group II
Marine pollutant NP
Description UN1230, METHANOL, 3 (6.1), II, (11°C C.C.)
Special Provisions 279
EmS-No. F-E, S-D

IATA

UN number or ID number UN1230
UN proper shipping name Methanol

Transport hazard class(es)	3
Subsidiary hazard class	6.1
Packing group	II
Description	UN1230, Methanol, 3 (6.1), II
Special Provisions	A113
ERG Code	3L

ANTT

UN number or ID number	UN1230
UN proper shipping name	Methanol
Transport hazard class(es)	3
Subsidiary hazard class	6.1
Packing group	II
Environmental hazards	No
Description	UN1230, Methanol, 3 (6.1), II
Special Provisions	279
Hazard ID number	336

15. Regulatory information

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

Brazil

See section 8 for national exposure control parameters

Other Regulations

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

Contact supplier for inventory compliance status

TSCA	Listed.
DSL/NDSL	Listed on DSL.
EINECS/ELINCS	Listed.
ENCS	Listed.
IECSC	Listed.
KECI	Listed.
PICCS	Listed.
AICS	Listed.

16. Other information

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

Legend

SVHC: Substances of Very High Concern for Authorization:
PBT: Persistent, Bioaccumulative, and Toxic (PBT) Substances
vPvB: Very Persistent and very Bioaccumulative (vPvB) Substances
STOT: Specific Target Organ Toxicity

ATE: Acute Toxicity Estimate
LC50: 50% Lethal Concentration
LD50: 50% Lethal Dose

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	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)
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)
U.S. 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

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Revision Note Updated format. Change in classification.

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Disclaimer
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End of Safety Data Sheet