

SAFETY DATA SHEET

1. Identification

Product identifier: Methanol

Other means of identification

Synonyms: Methyl alcohol
Product No.: 3004, 3016, 3017, 3041, 3042, 3290, 3292, 3390, 5370, 5595, 5842, 6290, 8814, 8818, 8820, 8888, 9049, 9063, 9066, 9067, 9069, 9070, 9073, 9076, 9077, 9093, 9097, 9098, 9124, 9263, 9830, 9863, H080, H488, H603, V184, 10111, 10333, 12210, 12211, 22210, 72690, IMB9065, IMB9423, IMB9424

Recommended use and restriction on use

Recommended use: For Laboratory, Research or Manufacturing Use.
Restrictions on use: Not determined.

Details of the supplier of the safety data sheet

Avantor Performance Materials, LLC
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 Radnor, PA 19087

Telephone: Customer Service: 855-282-6867

Fax:
 Contact Person: Product Information Compliance
 E-mail: info@avantormaterials.com

Emergency telephone number:

CHEMTREC: 1-800-424-9300 within US and Canada (24 hrs/day, 7 days/week)

2. Hazard identification

Hazard Classification

Physical Hazards

Flammable liquids	Category 2
Static-accumulating flammable liquid	Category 1

Health Hazards

Acute toxicity (Oral)	Category 3
Acute toxicity (Dermal)	Category 3
Acute toxicity (Inhalation - vapor)	Category 3
Skin Corrosion/Irritation	Category 2A
Serious Eye Damage/Eye Irritation	Category 2
Toxic to reproduction	Category 2
Specific Target Organ Toxicity - Single Exposure	Category 1 ¹

Target Organs

1. Central nervous system, Eyes

Label Elements

Hazard Symbol:



Signal Word: Danger

Hazard Statement: Toxic in contact with skin.
Toxic if inhaled.
Toxic if swallowed.
Highly flammable liquid and vapor.
Causes skin irritation.
Causes serious eye irritation.
Suspected of damaging fertility or the unborn child.
Causes damage to organs.

Precautionary Statements

Prevention: Obtain special instructions before use. Do not breathe dust/fume/gas/mist/vapors/spray. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof [electrical/ventilating/lighting] equipment. Use non-sparking tools. Take action to prevent static discharges.

Response: IF exposed or concerned: Get medical advice/attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF SWALLOWED: Immediately call a POISON CENTER/doctor.

Storage: Store in a well-ventilated place. Keep cool. Store locked up.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	Content in percent (%)*
Methanol	Methyl alcohol	67-56-1	99 - 100%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information:	Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.
Ingestion:	Call a physician or poison control center immediately. Do NOT induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Inhalation:	Move to fresh air. Call a physician or poison control center immediately. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen.
Skin Contact:	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician or poison control center immediately. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.
Eye contact:	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.

Most important symptoms/effects, acute and delayed

Symptoms:	Toxic if inhaled. Toxic if swallowed. Toxic in contact with skin. Irritating to eyes, respiratory system and skin.
Hazards:	None known.

Indication of immediate medical attention and special treatment needed

Treatment:	Treat symptomatically. Symptoms may be delayed.
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5. Fire-fighting measures

General Fire Hazards:	Static charges generated by emptying package in or near flammable vapor may cause flash fire.
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Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:	Water spray, foam, dry powder or carbon dioxide.
Unsuitable extinguishing media:	Avoid water in straight hose stream; will scatter and spread fire.

Specific hazards arising from the chemical:	Can be ignited easily and burns vigorously. Vapor from the solvent may accumulate in container headspace resulting in flammability hazard. Fire may produce irritating, corrosive and/or toxic gases.
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Special protective equipment and precautions for firefighters

Special fire fighting procedures:	Use water spray to keep fire-exposed containers cool. Fight fire from a protected location. Move containers from fire area if you can do so without risk. Cool containers exposed to flames with water until well after the fire is out.
Special protective equipment for fire-fighters:	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Keep unauthorized personnel away. Keep upwind. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See Section 8 of the SDS for Personal Protective Equipment.

Methods and material for containment and cleaning up: In case of leakage, eliminate all ignition sources. Use non-sparking tools. All equipment used when handling the product must be grounded. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.

Notification Procedures: Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk. Inform authorities if large amounts are involved.

Environmental Precautions: Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling: DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take action to prevent static discharges. Use non-sparking tools. Use personal protective equipment as required. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Do not eat, drink or smoke when using the product. Use only with adequate ventilation. Wash hands thoroughly after handling. See Section 8 of the SDS for Personal Protective Equipment.

Conditions for safe storage, including any incompatibilities: Keep away from food, drink and animal feeding stuffs. Keep out of reach of children. Keep container tightly closed in a cool, well-ventilated place. Store in a dry place. Ground container and transfer equipment to eliminate static electric sparks. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of flammable liquids.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values	Source
Methanol	STEL	328 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	TWA	262 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
Methanol	STEL	250 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	200 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Methanol	TWA	200 ppm	Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2011)
	STEL	250 ppm	Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2011)

Methanol	STEL	250 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
	TWA	200 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Methanol	15 MIN ACL	250 ppm	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	8 HR ACL	200 ppm	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
Methanol	STEL	250 ppm 328 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
	TWA	200 ppm 262 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Methanol	TWA	200 ppm	US. ACGIH Threshold Limit Values (2011)
	STEL	250 ppm	US. ACGIH Threshold Limit Values (2011)

Appropriate Engineering Controls No data available.

Individual protection measures, such as personal protective equipment

General information: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area. Use explosion-proof ventilation equipment.

Eye/face protection: Chemical goggles and face shield are recommended.

Skin Protection

Hand Protection: Chemical resistant gloves

Other: Wear suitable protective clothing and gloves.

Respiratory Protection: In case of inadequate ventilation use suitable respirator.

Hygiene measures: Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned. Wash contaminated clothing before reuse.

9. Physical and chemical properties

Appearance

Physical state: Liquid

Form: Liquid

Color: Colorless

Odor: Characteristic

Odor threshold: No data available.

pH: No data available.

Melting point/freezing point: -97,8 °C

Initial boiling point and boiling range: 64 °C (101,3 kPa)

Flash Point: 11 - 12 °C (Closed Cup)

Evaporation rate: No data available.

Flammability (solid, gas): No data available.

Upper/lower limit on flammability or explosive limits

Flammability limit - upper (%):	36 %(V)
Flammability limit - lower (%):	6 %(V)
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	16,9 kPa (25 °C)
Vapor density:	1,11 (Air = 1)
Density:	0,8 g/ml (25 °C)
Relative density:	0,7866 (25 °C)
Solubility(ies)	
Solubility in water:	1.000 g/l
Solubility (other):	ether: Miscible acetone: Soluble benzene: Miscible chloroform: Soluble Ethanol.: Miscible
Partition coefficient (n-octanol/water):	-0,77
Auto-ignition temperature:	240 °C
Decomposition temperature:	No data available.
Viscosity:	No data available.
Other information	
Liquid conductivity:	0,45 µS/cm
Molecular weight:	32,04 g/mol (CH ₃ OH)

10. Stability and reactivity

Reactivity:	Contact with metals may evolve flammable hydrogen gas.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Hazardous polymerization does not occur.
Conditions to avoid:	Heat, sparks, flames. Sunlight.
Incompatible Materials:	Strong oxidizing agents. Acids.
Hazardous Decomposition Products:	Thermal decomposition may release oxides of carbon. Formaldehyde.

11. Toxicological information
Information on likely routes of exposure

Inhalation:	Toxic by inhalation.
Skin Contact:	Toxic in contact with skin.
Eye contact:	Causes serious eye irritation.
Ingestion:	Toxic if swallowed.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product: LD 50 (Rat): 5.628 mg/kg

Dermal

Product: LD 50 (Rabbit): 15.800 mg/kg

Inhalation

Product: LC 50 (Rat): > 145000 ppm
LC 50 (Rat): 64000 ppm

Repeated dose toxicity

Product: In serious cases absorption of methanol in the body may lead to damage to the eyesight.

Skin Corrosion/Irritation

Product: Causes skin irritation.

Serious Eye Damage/Eye Irritation

Product: Causes eye irritation.

Respiratory or Skin Sensitization

Product: Not a skin sensitizer.

Carcinogenicity

Product: This substance has no evidence of carcinogenic properties.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

ACGIH Carcinogen List:

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro

Product: No mutagenic components identified

In vivo

Product: No mutagenic components identified

Reproductive toxicity

Product: Suspected of damaging fertility or the unborn child.

Specific Target Organ Toxicity - Single Exposure

Product: Central nervous system. Eyes.

Specific Target Organ Toxicity - Repeated Exposure

Product: None known.

Aspiration Hazard

Product: No data available.

Specified substance(s):
Methanol Not classified

Other effects: None known.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: LC 50 (Fathead minnow (*Pimephales promelas*), 96 h): > 100 mg/l

Aquatic Invertebrates

Product: EC 50 (Water flea (*Daphnia magna*), 48 h): > 10.000 mg/l

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic Invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and Degradability

Biodegradation

Product: Expected to be readily biodegradable.

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: May accumulate in soil and water systems.

Partition Coefficient n-octanol / water (log Kow)

Product: Log Kow: -0,77

Mobility in soil: No data available.

Other adverse effects: The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

13. Disposal considerations

Disposal instructions: Discharge, treatment, or disposal may be subject to national, state, or local laws.

Contaminated Packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

TDG

UN Number:	UN 1230
UN Proper Shipping Name:	METHANOL
Transport Hazard Class(es)	
Class:	3
Label(s):	3, 6.1
Packing Group:	II
Marine Pollutant:	No
Special precautions for user:	Not determined.

IMDG

UN Number:	UN 1230
UN Proper Shipping Name:	METHANOL
Transport Hazard Class(es)	
Class:	3
Label(s):	3, 6.1
EmS No.:	F-E, S-D
Packing Group:	II
Marine Pollutant:	No
Special precautions for user:	Not determined.

IATA

UN Number:	UN 1230
UN Proper Shipping Name:	Methanol
Transport Hazard Class(es):	
Class:	3
Label(s):	3, 6.1
Packing Group:	II
Marine Pollutant:	No
Special precautions for user:	Not determined.
Cargo aircraft only:	Allowed.

Transport in bulk according to Annex II of MARPOL and the IBC Code: Not applicable

15. Regulatory information

Canada Federal Regulations

List of Toxic Substances (CEPA, Schedule 1)

Not Regulated

Export Control List (CEPA 1999, Schedule 3)

Not Regulated

National Pollutant Release Inventory (NPRI)

Canada. National Pollutant Release Inventory (NPRI) Substances, Part 5, VOCs with Additional Reporting Requirements

NPRI PT5	Methanol
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Canada. National Pollutant Release Inventory (NPRI) (Schedule 1, Parts 1-4)

NPRI	Methanol
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Greenhouse Gases

Not Regulated

Controlled Drugs and Substances Act

CA CDSI	Not Regulated
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CA CDSII	Not Regulated
CA CDSIII	Not Regulated
CA CDSIV	Not Regulated
CA CDSV	Not Regulated
CA CDSVII	Not Regulated
CA CDSVIII	Not Regulated

Precursor Control Regulations

Not Regulated

International regulations

Montreal protocol

Not applicable

Stockholm convention

Not applicable

Rotterdam convention

Not applicable

Kyoto protocol

Not applicable

Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
Japan ISHL Listing:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Mexico INSQ:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Philippines PICCS:	On or in compliance with the inventory
Taiwan Chemical Substance Inventory:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory

16. Other information

Revision Date: 05.10.2020

Version #: 1.3

Source of information: Sources of information used in preparing this SDS included one or more of the following: results from in house or supplier toxicology studies, information from the Toxicology Data Network (TOXNET), European Chemical Agency (ECHA) substance dossiers, IARC Monographs, US National Toxicology Program data, the Agency for Toxic Substances and Disease Registry, other manufacturer's SDSs and other sources, as appropriate.

Further Information: No data available.

Disclaimer:

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