

Safety Data Sheet

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

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SECTION 1: Identification

Product identifier

Trade name/designation:	Methanol
Product No.:	BDH85800
Synonyms:	none
CAS No.:	67-56-1

Relevant identified uses of the substance or mixture and uses advised against

Recommended use	For Further Manufacturing Use Only
Uses advised against	Not for Human or Animal Drug Use

Details of the supplier of the safety data sheet

Supplier

VWR International LLC

Street	100 Matsonford Road Radnor Corporate Center, Building One, Suite 200 P. O. Box 6660
Postal code/City	Radnor, PA 19087
Telephone	+1-800-932-5000 toll-free within US/Canada +1-610-386-1700
Telefax	+1-610-728-2103

Emergency phone number

Telephone +1-800-424-9300 (Chemtrec, 24 hrs/day, 7 days/week, USA)

Preparation Information

VWR International - Product Information Compliance

E-mail SDS@avantorsciences.com

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910.1200 (OSHA HCS)

Hazard classes and hazard categories	Hazard statements
Flammable liquid, category 2	H225
Specific target organ toxicity (single exposure), category 1	H370
Acute toxicity, category 3, oral, dermal and inhalation	H301+H311+H331

2.2 Label elements

Labelling in accordance with 29 CFR 1910.1200 (OSHA HCS)

Hazard pictograms



Signal word: Danger

Hazard statements	
H225	Highly flammable liquid and vapor.
H301+H311+H331	Toxic if swallowed, in contact with skin or if inhaled.
H370	Causes damage to organs.

Precautionary statements	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P243	Take precautionary measures against static discharge.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash ... thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P270	Do not eat, drink or smoke when using this product.
P242	Use only non-sparking tools.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...
P302+P352	IF ON SKIN: Wash with plenty of water/...
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P362+P364	Take off contaminated clothing and wash it before reuse.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P311	IF exposed or concerned: Call a POISON CENTER/doctor/...
P311	Call a POISON CENTER/doctor/...
P312	Call a POISON CENTER/doctor/.../if you feel unwell.
P321	Specific treatment (see ... on this label).
P370+P378	In case of fire: Use... to extinguish.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container to ...

Hazards not otherwise classified (HNOC)

none

SECTION 3: Composition / information on ingredients

3.1 Substances

Substance name	Methanol
Molecular formula	H ₃ COH
Molecular weight	32.04 g/mol
CAS No.	67-56-1

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

Do not leave affected person unattended. If unconscious but breathing normally, place in recovery position and seek medical advice. Take off immediately all contaminated clothing. Highly flammable liquid and vapor. Wash contaminated clothing before reuse. When in doubt or if symptoms are observed, get medical advice.

In case of inhalation

Remove casualty to fresh air and keep warm and at rest. In case of respiratory tract irritation, consult a physician. When in doubt or if symptoms are observed, get medical advice.

In case of skin contact

Remove contaminated, saturated clothing immediately. Wash off any skin contamination immediately.

After eye contact:

Rinse immediately carefully and thoroughly with eye-bath or water. Remove contact lenses, if present and easy to do. Continue rinsing. Consult an ophthalmologist. Call a POISON CENTER or doctor/physician.

In case of ingestion

Rinse mouth thoroughly with water. Immediately call a POISON CENTER/doctor. Never give anything by mouth to an unconscious person or a person with cramps.

Self-protection of the first aider

First aider: Pay attention to self-protection! Wear personal protection equipment (refer to section 8). In case of insufficient ventilation and/or through use, explosive/highly flammable mixtures may develop.

4.2 Most important symptoms/effects, acute and delayed

Headache. Dizziness. Nausea. Respiratory disorders. Coma. Acidosis Risk of blindness.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Following ingestion: Administer 50 mL of pure ethanol in a drinkable concentration. Methanol is metabolized to the highly toxic compounds formaldehyde and formic acid that are responsible for the acidosis and blindness characteristic of methanol poisoning. The onset of symptoms may be delayed for 18 to 72 hours after ingestion. Toxicity is related to the degree of acidosis produced.

SECTION 5: Fire fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings.

Water spray

ABC-powder

Carbon dioxide (CO₂)

Nitrogen

Extinguishing media which must not be used for safety reasons

Full water jet

5.2 Specific hazards arising from the chemical

In case of fire may be liberated:
Carbon monoxide
Carbon dioxide (CO₂)

5.3 Advice for firefighters

Combustible toxic substances (liquid)
In case of fire and/or explosion do not breathe fumes.
In case of insufficient ventilation and/or through use, explosive/highly flammable mixtures may develop.
Vapors are heavier than air, spread along floors and form explosive mixtures with air.
Protective equipment and precautions for firefighters:
Wear a self-contained breathing apparatus and chemical protective clothing.
Use water spray/stream to protect personnel and to cool endangered containers.
DO NOT fight fire when fire reaches explosives.

Additional information

Do not allow run-off from fire-fighting to enter drains or water courses.
Do not inhale explosion and combustion gases.
Use caution when applying carbon dioxide in confined spaces. Carbon dioxide can displace oxygen.
Use water spray/stream to protect personnel and to cool endangered containers.
In case of fire: Evacuate area.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Wear personal protection equipment (refer to section 8). Do not breathe gas/fume/vapor/spray. Avoid contact with skin, eyes and clothes. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Provide adequate ventilation.

6.2 Environmental precautions

Discharge into the environment must be avoided. Do not allow to enter into surface water or drains. Explosion risk.

6.3 Methods and material for containment and cleaning up

Cover drains. Absorb spillage to prevent material damage. Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Dispose according to legislation.

6.4 Additional information

Personal protection equipment (PPE): see section 8 SECTION 13. Information regarding the disposal of the products

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advices on safe handling

Wear personal protection equipment (refer to section 8).

Avoid contact with eyes and skin.

Avoid inhalation of the product.

Use extractor hood (laboratory).

Provide adequate ventilation.

Measures to prevent fire, aerosol and dust generation

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

Take precautionary measures against static discharges.

Measures required to protect the environment

Due to danger of explosion, prevent leakage of vapors into cellars, flues and ditches.

Wash hands before breaks and after work. Avoid contact with eyes and skin. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

7.2 Conditions for safe storage, including any incompatibilities

Recommended storage temperature: Ambient temperature

Storage: Keep container tightly closed and in a well-ventilated place. Keep/Store away from combustible materials. Protect from sunlight. Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Suitable container/equipment material:

Glass Steel Stainless steel Unsuitable container/equipment material: Aluminium Polyethylene PVC (polyvinyl chloride)

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredient (Designation)	Source	Country	parameter	Limit value
Methanol	NIOSH	US	LTV	260 mg/m ³ - 200 ppm
Methanol	NIOSH	US	STV	325 mg/m ³ (1) - 250 ppm (1)
Methanol	OSHA	US	LTV	260 mg/m ³ - 200 ppm

8.2 Engineering controls

Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment. If handled uncovered, arrangements with local exhaust ventilation have to be used.

Personal protection equipment (PPE)

Wear suitable protective clothing. When handling with chemical substances, protective clothing must be worn.

Eye/face protection

Eye glasses with side protection

Skin protection

Wear suitable gloves. When handling with chemical substances, protective gloves must be worn. In the case of wanting to use the gloves again, clean them before taking off and air them well. Check leak tightness/impermeability prior to use.

By short-term hand contact

Suitable material:	NBR (Nitrile rubber)
Thickness of the glove material:	0,38 mm
Breakthrough time:	-

By long-term hand contact

Suitable material:	Butyl caoutchouc (butyl rubber)
Thickness of the glove material:	0,30 mm
Breakthrough time:	> 480 min

Respiratory protection

Respiratory protection necessary at: aerosol or mist formation If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

Additional information

Wash hands before breaks and after work. Avoid contact with eyes and skin. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

Environmental exposure controls

no data available

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

(a) Appearance	
Physical state:	liquid
Color:	colorless
(b) Odor:	characteristic
(c) Odor threshold:	no data available

Safety relevant basic data

(d) pH:	7 (20 °C)
(e) Melting point/freezing point:	-98 °C
(f) Initial boiling point and boiling range:	64.6 °C (1013 hPa)
(g) Flash point:	11 °C (closed cup)
(h) Evaporation rate:	no data available
(i) Flammability (solid, gas):	Highly flammable liquid and vapor.
(j) Flammability or explosive limits	
Lower explosion limit:	5.5 % (v/v)
Upper explosion limit:	36.5 % (v/v)
(k) Vapor pressure:	128 hPa (20 °C)
(l) Vapor density:	1.11 (20 °C)
(m) Density:	0.7918 g/cm ³ (20 °C)
(n) Solubility(ies)	
Water solubility:	soluble (20 °C)
(o) Partition coefficient: n-octanol/water:	-0.77 (20 °C)
(p) Auto-ignition temperature:	455 °C (DIN 51794)
(q) Decomposition temperature:	not applicable
(r) Viscosity	
Kinematic viscosity:	no data available
Dynamic viscosity:	0.614 mPa*s (20 °C)
(s) Explosive properties:	not applicable
(t) Oxidising properties:	not applicable
(u) Particle characteristics:	does not apply to liquids

9.2 Other information

Bulk density:	no data available
Refraction index:	1.33066 (589 nm; 20 °C)
Dissociation constant:	no data available
Surface tension:	no data available
Henry's Law Constant:	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is non-reactive under normal conditions.

Chemical stability

Vapor may form explosive mixtures with air.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions

Formation of explosive mixtures with:

Oxidising agent

Nitrogen oxides (NO_x)

Chlorates

Nitric acid

Sulfuric acid.

Exothermic reaction with:

Reducing agent

Acid

Acid halides

Alkali (lye), concentrated

Violent reaction with:

Alkali metals

Alkaline earth metal

Formation of:

Hydrogen

10.4 Conditions to avoid

UV-radiation/sunlight

Heat

Sparks.

Flame

10.5 Incompatible materials

Acids

Alkali metals

Oxidising agent

10.6 Hazardous decomposition products

Formaldehyde

10.7 Additional information

Slowly corrodes aluminium and zinc under hydrogen evolution.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute effects

Acute oral toxicity:

LDLo: > 143 mg/kg - Human - (RTECS)

LD50: 1187 - 2769 mg/kg - Rat - (OECD 401)

Acute dermal toxicity:

LD50: 17100 mg/kg - Rabbit - (ECHA)

Acute inhalation toxicity:

TCLo: > 160 ppm (4 h) - Human

LD50: 43700 mg/m³ (6 h) - Cat - (J Appl Toxicol 14(4): 309-313)

Irritant and corrosive effects

Primary irritation to the skin:

not applicable

Irritation to eyes:

not applicable

Irritation to respiratory tract:

not applicable

Respiratory or skin sensitization

In case of skin contact: not sensitizing

In case of inhalation: not sensitizing

STOT-single exposure

Causes damage to organs.

STOT-repeated exposure

not applicable

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Carcinogenicity

No indication of human carcinogenicity.

Germ cell mutagenicity

No indications of human germ cell mutagenicity exist.

Reproductive toxicity

No indications of human reproductive toxicity exist.

Aspiration hazard

not applicable

Other adverse effects

no data available

Additional information

no data available

SECTION 12: Ecological information

12.1 Ecotoxicity

Fish toxicity:

LC50: 24000 mg/l (96 h) - Poirier, S.H., M.L. Knuth, C.D. Anderson-Buchou, L.T. Brooke, A.R. Lima, and P.J. Shubat 1986. Comparative Toxicity of Methanol and N,N-Dimethylformamide to Freshwater Fish and Invertebrates. Bull. Environ. Contam. Toxicol. 37(4):615-621

Daphnia toxicity:

LC50: 3290 mg/l (48 h) - Guilhermino, L., T. Diamantino, M.C. Silva, and A.M.V.M. Soares 2000. Acute Toxicity Test with Daphnia magna: An Alternative to Mammals in the Prescreening of Chemical Toxicity?. Ecotoxicol. Environ. Saf. 46(3):357-362

EC50: 24500 mg/l (48 h) - Randall, T.L., and P.V. Knopp 1980. Detoxification of Specific Organic Substances by Wet Oxidation. J. Water Pollut. Control Fed. 52(8):2117-2130

Algae toxicity:

EC50: 22 000 mg/l (96 h) Pseudokirchneriella subcapitata - IUCLID

Bacteria toxicity:

no data available

12.2 Persistence and degradability

Biodegradable.

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water: -0.77 (20 °C)

12.4 Mobility in soil:

no data available

12.5 Results of PBT/vPvB assessment

not applicable

12.6 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Appropriate disposal / Product

Dispose according to legislation. Consult the appropriate local waste disposal expert about waste disposal.

Waste code product: 070104

Appropriate disposal / Package

Dispose according to legislation. Handle contaminated packages in the same way as the substance itself. This material and its container must be disposed of as hazardous waste. Do not open container by force. Warning: Do not refill! Do not pierce or burn, even after use.

Additional information

no data available

SECTION 14: Transport information

Land transport (DOT)

UN-No.:	UN1230
Proper Shipping Name:	METHANOL
Class(es):	3
Hazard label(s):	3
Packing group:	II
Environmental hazards:	No
Marine pollutant:	No
Special precautions for user:	

Sea transport (IMDG)

UN-No.:	1230
Proper Shipping Name:	METHANOL
Class(es):	3 (6.1)
Hazard label(s):	3+6.1
Packing group:	II
Environmental hazards:	No
Marine pollutant:	No
Special precautions for user:	
Segregation group:	-
EmS-No.	F-E S-D
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	not relevant

Air transport (ICAO-TI / IATA-DGR)

UN-No.:	1230
Proper Shipping Name:	METHANOL
Class(es):	3 (6.1)

Classification code:
Hazard label(s): 3+6.1
Packing group: II
Special precautions for user:

SECTION 15: Regulatory information

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

National regulations

Toxic Substances Control Act (TSCA)

Listed

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

SARA 313 Components

Listed

US State Regulations

Massachusetts Right To Know Components

Listed

Pennsylvania Right To Know Components

Listed

New Jersey Right To Know Components

Listed

California Prop. 65 Components



WARNING:

This product can expose you to chemicals including Methanol which is known to the State of California to cause birth defects or other reproductive harm.

For more information go to www.P65Warnings.ca.gov.

SECTION 16: Other information

Abbreviations and acronyms

ACGIH - American Conference of Governmental Industrial Hygienists
 DOT - Department of Transportation
 IARC - International Agency for Research on Cancer
 IATA-DGR - International Air Transport Association-Dangerous Goods Regulations
 ICAO-TI - International Civil Aviation Organization-Technical Instructions
 IMDG - International Maritime Code for Dangerous Goods
 LTV - Long Term Value
 NIOSH - National Institute for Occupational Safety and Health
 NTP - National Toxicology Program
 OSHA - Occupational Safety & Health Administration
 PBT - Persistent, Bioaccumulative and Toxic
 PEL - Permissible Exposure Limit
 STV - Short Term Value
 SVHC - Substances of Very High Concern
 TDG - Transport of Dangerous Goods
 TLV - Threshold Limit Value
 vPvB - very Persistent, very Bioaccumulative

Key literature references and sources for data

This Safety Data Sheet has been prepared based on information available for public as TOXNET information, European Chemicals Agency (ECHA) substance dossier, papers from international cancer research institutes (IARC Monographs), U.S. National Toxicology Program data, U.S. Agency for Toxic Substances and Disease Control (ATSDR), PubChem websites and SDS from our raw material manufacturers.

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Additional information

Indication of changes none/none

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guidance. The information in this document is based on the present state knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. VWR International and his Affiliates shall not be held liable for any damage resulting from handling.