KOCH METHANOL, LLC

SAFETY DATA SHEET

1. Identification

Product identifier **Methanol**

Other means of identification

MSDS Number KMe_CH3OH_US_EN

Recommended use Feedstock.

Recommended restrictions Use in accordance with supplier's recommendations.

Manufacturer / Importer / Supplier / Distributor information

Company name
Koch Methanol LLC
P.O. Box 2219, Wichita, KS 67201-2219
316-828-7672
kochmsds@kochind.com

Emergency
For Chemical Emergency
Call CHEMTREC day or night
1.800.424.9300
Mexico - 1.800.681.9531
Outside USA/Canada
1.703.527.3887
(collect calls accepted)

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 2
Health hazards	Acute toxicity, oral	Category 3
	Acute toxicity, dermal	Category 3
	Acute toxicity, inhalation	Category 3
	Specific target organ toxicity, single exposure	Category 1 (central nervous system, optic nerve)

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement Highly flammable liquid and vapor. Toxic if swallowed. Toxic in contact with skin. Toxic if inhaled. Causes damage to organs (central nervous system, optic nerve).

Precautionary statement

Prevention Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting// equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.

Response Eliminate all ignition sources if safe to do so. If swallowed: Immediately call a poison center/doctor. Rinse mouth. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a poison center/doctor if you feel unwell. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor. In case of fire: Use alcohol-resistant foam, carbon dioxide, dry powder or water fog for extinction. If exposed: Call a poison center/doctor.

Storage Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.

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

Hazard(s) not otherwise classified (HNOC) Static accumulating flammable liquids

Supplemental information

Hazard statement Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
Methanol		67-56-1	> 99

Composition comments

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
This Safety Data Sheet is not a guarantee of product specification or NPK value(s). NPK content is on specified sales orders, customer invoices, or product specification sheets obtained from supplier.

4. First-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If the affected person is not breathing, apply artificial respiration. Do not use mouth-to-mouth method if victim inhaled the substance. Get medical attention immediately.

Skin contact

Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately.

Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Ingestion

Rinse mouth with water and afterwards drink plenty of water. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Call a physician or poison control center immediately.

Most important symptoms/effects, acute and delayed

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Effects on exposure by inhalation may include sore throat, cough, burning sensation, shortness of breath and labored breathing.

Indication of immediate medical attention and special treatment needed

Treat symptomatically.

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

5. Fire-fighting measures

Suitable extinguishing media

Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.

Unsuitable extinguishing media

Water may be ineffective.

Specific hazards arising from the chemical

During fire, gases hazardous to health may be formed. Sealed containers may rupture when heated. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur.

Special protective equipment and precautions for firefighters

Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Structural firefighters protective clothing will only provide limited protection.

Fire-fighting equipment/instructions

Evacuate area and fight fire from a safe distance. Ventilate closed spaces before entering them. Stop leak if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Keep people away from and upwind of spill/leak. Keep out of low areas. Ventilate closed spaces before entering them. DO NOT touch spilled material. See Section 8 of the SDS for Personal Protective Equipment.

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Be aware of danger of explosion. Take precautionary measures against static discharge. Use only non-sparking tools. Dike the spilled material, where this is possible.

Large Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. After removal flush contaminated area thoroughly with water.

Small Spills: Absorb spill with vermiculite or other inert material. Clean contaminated surface thoroughly.

Never return spills to original containers for re-use. This material and its container must be disposed of as hazardous waste.

Environmental precautions Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling Should be handled in closed systems, if possible. If enclosed handling cannot be guaranteed, ventilation and protective clothing must be used. Avoid any exposure. The product is flammable, and heating may generate vapors which may form explosive vapor/air mixtures. Vapors are heavier than air and may travel along the floor and in the bottom of containers. Vapors may be ignited by a spark, a hot surface or an ember. Ground container and transfer equipment to eliminate static electric sparks. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Follow rules for flammable liquids. Do not store near heat sources or expose to high temperatures. Keep away from heat, sparks and open flame. Keep container tightly closed. Store in a cool and well-ventilated place. Store away from incompatible materials. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Keep under a nitrogen blanket.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Methanol (CAS 67-56-1)	PEL	260 mg/m3 200 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Methanol (CAS 67-56-1)	STEL	250 ppm
	TWA	200 ppm

US NIOSH Pocket Guide to Chemical Hazards: Recommended exposure limit (REL)

Components	Type	Value
Methanol (CAS 67-56-1)	TWA	260 mg/m3 200 ppm

US NIOSH Pocket Guide to Chemical Hazards: Short Term Exposure Limit (STEL)

Components	Type	Value
Methanol (CAS 67-56-1)	STEL	325 mg/m3 250 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Methanol (CAS 67-56-1)	15 mg/l	Methanol	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

Methanol (CAS 67-56-1) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Methanol (CAS 67-56-1) Skin designation applies.

US - Tennesse OELs: Skin designation

Methanol (CAS 67-56-1) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Methanol (CAS 67-56-1) Can be absorbed through the skin.

US. NIOSH: Pocket Guide to Chemical Hazards

Methanol (CAS 67-56-1) Can be absorbed through the skin.

Appropriate engineering controls Use explosion-proof equipment. Should be handled in closed systems, if possible. Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors. Provide easy access to water supply or an emergency shower.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles). Wear approved safety glasses or goggles. Wear a full-face respirator, if needed.

Skin protection

Hand protection Wear protective gloves. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.

Other Wear appropriate chemical resistant clothing to prevent any possibility of skin contact.

Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In case of insufficient ventilation, wear suitable respiratory equipment. Use a NIOSH/MSHA approved air purifying respirator as needed to control exposure. Consult with respirator manufacturer to determine respirator selection, use, and limitations. Use positive pressure, air-supplied respirator for uncontrolled releases or when air purifying respirator limitations may be exceeded. Follow respirator protection program requirements (OSHA 1910.134 and ANSI Z88.2) for all respirator use.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	Colorless liquid.
Physical state	Liquid.
Form	Liquid.
Color	Colorless.
Odor	Alcoholic.
Odor threshold	2000 ppm
pH	Not available.
Melting point/freezing point	-144.4 °F (-98 °C) estimated
Initial boiling point and boiling range	148.1 °F (64.5 °C) estimated
Flash point	51.8 °F (11.0 °C) Tag closed cup
Evaporation rate	2.1 (butyl acetate = 1)
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not determined
Flammability limit - upper (%)	Not determined
Vapor pressure	Not determined
Vapor density	1.1 (air=1)
Relative density	Not available.
Solubility(ies)	Not determined
Partition coefficient (n-octanol/water)	-0.77
Auto-ignition temperature	725 °F (385 °C)
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	0.79 g/cm³
Flash point class	Flammable IB
Molecular formula	CH3OH
Molecular weight	32.04 g/mol

10. Stability and reactivity

Reactivity	The product is stable and non reactive under normal conditions of use, storage and transport.
Chemical stability	Stable at normal conditions. The product is hygroscopic and will absorb water by contact with the moisture in the air.
Possibility of hazardous reactions	Will not occur.
Conditions to avoid	Heat, flames and sparks. High temperatures.
Incompatible materials	Strong oxidizing agents. Oxidizing agents. Metals. Strong bases.

Hazardous decomposition products Carbon monoxide. Formaldehyde.

11. Toxicological information

Information on likely routes of exposure

Ingestion Toxic if swallowed.

Inhalation Toxic by inhalation.

Skin contact Toxic in contact with skin.

Eye contact May cause eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Effects on exposure by inhalation may include sore throat, cough, burning sensation, shortness of breath and labored breathing.

Information on toxicological effects

Acute toxicity Toxic if swallowed, in contact with skin or if inhaled. Even small amounts (30-250 ml methanol) may be fatal. Symptoms are stomach ache, nausea, vomiting, dullness, visual disorder and blindness.

Components	Species	Test Results
Methanol (CAS 67-56-1)		
Acute		
Dermal		
LD50	Rabbit	15800 mg/kg
Inhalation		
LC50	Rat	64000 mg/l, 4 Hours
		87.5 mg/l, 6 Hours
Oral		
LD50	Monkey	2 g/kg
	Rat	5628 mg/kg

Skin corrosion/irritation May cause skin irritation.

Serious eye damage/eye irritation May cause eye irritation.

Respiratory sensitization No data available.

Skin sensitization Not a skin sensitizer.

Germ cell mutagenicity No data available.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

Reproductive toxicity No data available.

Specific target organ toxicity - single exposure Causes damage to organs (central nervous system, optic nerve).

Specific target organ toxicity - repeated exposure No data available.

Aspiration hazard No data available.

Chronic effects Prolonged inhalation may be harmful. Prolonged and repeated exposure to high vapor concentrations, skin absorption or ingestion of methanol may result in visual disturbances, metabolic acidosis, headache, giddiness, nausea, insomnia, gastric disturbance, dizziness, and slow breathing. There have been severe cases reported of blindness, coma and death due to the ingestion of methanol.

Further information Methanol: Human exposure to methanol may result in illness, systemic poisoning, blindness, optic nerve damage and perhaps death, after being ingested, absorbed through the skin or inhaled. Death due to cardiac or respiratory failure has been reported in some cases from consumption of as little as 30 mls.

12. Ecological information

Ecotoxicity Not expected to be harmful to aquatic organisms.

Components		Species	Test Results
Methanol (CAS 67-56-1)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	> 10000 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	> 100 mg/l, 96 hours

Persistence and degradability No data available.

Bioaccumulative potential Log Pow: < 1. Not expected to bioaccumulate on the basis of the low octanol-water partition coefficient.

Partition coefficient n-octanol / water (log Kow)

Methanol (CAS 67-56-1)	-0.77
Methanol (CAS 67-56-1)	-0.77

Mobility in soil The product is soluble in water. Expected to be highly mobile in soil.

Other adverse effects The product contains a substance which has a photochemical ozone creation potential.

13. Disposal considerations

Disposal instructions Dispose of all contaminants according to federal, state, and local regulations. Do not allow this material to drain into sewers/water supplies. Contract with a disposal operator licensed by the Law on Disposal and Cleaning.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code D001: Waste Flammable material with a flash point <140 °F

US RCRA Hazardous Waste U List: Reference

Methanol (CAS 67-56-1)	U154

Waste from residues / unused products Dispose of in accordance with local regulations.

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

14. Transport information

DOT

UN number	UN1230
UN proper shipping name	Methanol
Transport hazard class(es)	3
Subsidiary class(es)	6.1
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB2, T7, TP2
Packaging exceptions	150
Packaging non bulk	202
Packaging bulk	242

IATA

UN number	UN1230
UN proper shipping name	Methanol
Transport hazard class(es)	3
Subsidiary class(es)	6.1
Packaging group	II
Environmental hazards	No
Labels required	3, 6.1
ERG Code	3L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1230
UN proper shipping name	METHANOL
Transport hazard class(es)	3
Subsidiary class(es)	6.1
Packaging group	II
Environmental hazards	
Marine pollutant	No
Labels required	3, 6.1
EmS	F-E, S-D
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code This product is a liquid and when transported in bulk is covered under MARPOL 73/78 Annex II. This product is listed in the IBC Code.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Methanol (CAS 67-56-1)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No
SARA 302 Extremely hazardous substance	No
SARA 311/312 Hazardous chemical	Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Methanol	67-56-1	> 99

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Methanol (CAS 67-56-1)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)	Not regulated.
Food and Drug Administration (FDA)	Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Methanol (CAS 67-56-1)

US. New Jersey Worker and Community Right-to-Know Act

Methanol (CAS 67-56-1)	500 lbs

US. Pennsylvania RTK - Hazardous Substances

Methanol (CAS 67-56-1)

US. Rhode Island RTK

Methanol (CAS 67-56-1)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Methanol (CAS 67-56-1)

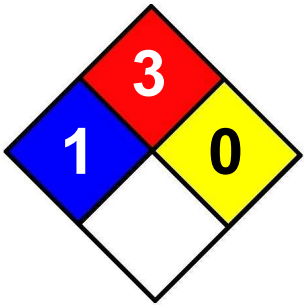
International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	06-September-2013
Revision date	-
Version #	01
NFPA Ratings	



List of abbreviations

LD50: Lethal Dose, 50%.
LC50: Lethal Concentration, 50%.

References

NLM: Hazardous Substances Data Base
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices

Disclaimer

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