



## MAGNESIUM METHOXIDE, 7-8% in methanol

Safety Data Sheet AKM503

Date of issue: 12/30/2014

Version: 1.0

### SECTION 1: Identification

#### 1.1. Identification

Product name	: MAGNESIUM METHOXIDE, 7-8% in methanol
Product code	: AKM503
Product form	: Mixture
Physical state	: Liquid
Formula	: C <sub>2</sub> H <sub>6</sub> MgO <sub>2</sub>
Synonyms	: MAGNESIUM DIMETHOXIDE; MAGNESIUM METHYLATE
Chemical family	: METAL COMPOUND

#### 1.2. Recommended use and restrictions on use

Recommended use : Chemical intermediate

#### 1.3. Supplier

##### GELEST, INC.

11 East Steel Road  
Morrisville, PA 19067  
USA

T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST

[info@gelest.com](mailto:info@gelest.com) - [www.gelest.com](http://www.gelest.com)

#### 1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS-US classification

Flammable liquids Category 2	H225 Highly flammable liquid and vapor
Acute toxicity (oral) Category 3	H301 Toxic if swallowed
Acute toxicity (dermal) Category 3	H311 Toxic in contact with skin
Acute toxicity (inhalation:vapor) Category 3	H331 Toxic if inhaled
Skin corrosion/irritation Category 2	H315 Causes skin irritation
Serious eye damage/eye irritation Category 1	H318 Causes serious eye damage
Specific target organ toxicity (single exposure) Category 1	H370 Causes damage to organs
Specific target organ toxicity (single exposure) Category 3	H336 May cause drowsiness or dizziness

Full text of H statements : see section 16

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) :

Danger

Hazard statements (GHS US) :

H225 - Highly flammable liquid and vapor  
H301+H311+H331 - Toxic if swallowed, in contact with skin or if inhaled  
H315 - Causes skin irritation  
H318 - Causes serious eye damage  
H336 - May cause drowsiness or dizziness  
H370 - Causes damage to organs

Precautionary statements (GHS US) :

P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
P260 - Do not breathe vapors.  
P264 - Wash hands thoroughly after handling.  
P210 - Keep away from heat, sparks, open flames. - No smoking.  
P240 - Ground/Bond container and receiving equipment  
P241 - Use explosion-proof electrical equipment  
P242 - Use only non-sparking tools.  
P243 - Take precautionary measures against static discharge.  
P271 - Use only outdoors or in a well-ventilated area.  
P270 - Do not eat, drink or smoke when using this product.  
P330 - Rinse mouth.  
P301+P310 - If swallowed: Immediately call a POISON CENTER  
P303+P361+P353 - If on skin (or hair): take off immediately all contaminated clothing. rinse

# MAGNESIUM METHOXIDE, 7-8% in methanol

## Safety Data Sheet

skin with water/shower  
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P307+P311 - If exposed: Call a poison center/doctor  
P332+P313 - If skin irritation occurs: Get medical advice/attention.  
P361 - Take off immediately all contaminated clothing.  
P362 - Take off contaminated clothing and wash before reuse.  
P363 - Wash contaminated clothing before reuse.  
P370+P378 - In case of fire: Use alcohol resistant foam, carbon dioxide, dry chemical to extinguish.  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.  
P403+P235 - Keep in a cool place  
P405 - Store locked up.  
P501 - Dispose of contents/container to licensed waste disposal facility.

### 2.3. Hazards not otherwise classified (HNOC)

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	GHS-US classification
Methanol	(CAS-No.) 67-56-1	> 90	Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation:vapour), H331 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 1, H370 STOT SE 3, H336
Magnesium methoxide	(CAS-No.) 109-88-6	< 10	Skin Irrit. 2, H315 Eye Irrit. 2A, H319

Full text of hazard classes and H-statements : see section 16

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

- First-aid measures general : Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label. Call a POISON CENTER or doctor/physician.
- First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.
- First-aid measures after skin contact : Remove/take off immediately all contaminated clothing. Wash with plenty of soap and water. Immediately call a poison center or doctor/physician. Wash contaminated clothing before reuse.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
- First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Immediately call a poison center or doctor/physician.

### 4.2. Most important symptoms and effects (acute and delayed)

- Symptoms/effects : Causes damage to organs.
- Symptoms/effects after inhalation : Toxic if inhaled. Danger of serious damage to health by prolonged exposure through inhalation. May cause drowsiness or dizziness. Overexposure may cause: Coughing. Headache. Nausea. Visual disturbances.
- Symptoms/effects after skin contact : Toxic in contact with skin. Repeated exposure to this material can result in absorption through skin causing significant health hazard. Causes skin irritation.
- Symptoms/effects after eye contact : Causes serious eye irritation.
- Symptoms/effects after ingestion : Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard. Oral toxicity is associated with methanol, the solvent and a hydrolysis product which causes nausea, vomiting, headache, visual effects including blindness.
- Chronic symptoms : On contact with water this compound liberates methanol which is known to have a chronic effect on the central nervous system. Methanol may effect the central nervous system resulting in persistent or recurring headaches or impaired vision.

### 4.3. Immediate medical attention and special treatment, if necessary

NOTE TO PHYSICIAN: The combination of visual disturbances, metabolic acidosis and formic acid in urine is evidence of methanol poisoning. The therapeutic intravenous administration of ethanol (10 ml/hour) allows methanol to be preferentially oxidized and reduces production of methanol

# MAGNESIUM METHOXIDE, 7-8% in methanol

## Safety Data Sheet

metabolites. Acidosis must be treated with intravenous administration of sodium bicarbonate and methanol elimination may be increased by hemodialysis, as indicated. Treatment should be based on blood methanol levels and acid-base balance.

### SECTION 5: Fire-fighting measures

#### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Alcohol-resistant foam. Carbon dioxide. Dry chemical.  
Unsuitable extinguishing media : Water.

#### 5.2. Specific hazards arising from the chemical

Fire hazard : Highly flammable liquid and vapor. Reacts with water, releasing magnesium hydroxide. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.  
Explosion hazard : May form flammable/explosive vapor-air mixture.

#### 5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Exercise caution when fighting any chemical fire.  
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapor and mist.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Eliminate every possible source of ignition. Use special care to avoid static electric charges.

##### 6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection. Avoid breathing vapors.

#### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

#### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal. Use only non-sparking tools.

#### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapors are flammable.  
Precautions for safe handling : Avoid all eye and skin contact and do not breathe vapor and mist. Containers must be properly grounded before beginning transfer. Provide good ventilation in process area to prevent accumulation of vapors. Use only non-sparking tools. Use only outdoors or in a well-ventilated area.  
Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

#### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical equipment.  
Storage conditions : Keep container tightly closed.  
Incompatible materials : Air. Water.  
Storage area : Store in a well-ventilated place. Store away from heat.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

Methanol (67-56-1)		
ACGIH	ACGIH TWA (ppm)	200 ppm
ACGIH	ACGIH STEL (ppm)	250 ppm
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	260 mg/m <sup>3</sup>
OSHA	OSHA PEL (TWA) (ppm)	200 ppm
IDLH	US IDLH (ppm)	6000 ppm
NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	260 mg/m <sup>3</sup>

# MAGNESIUM METHOXIDE, 7-8% in methanol

## Safety Data Sheet

Methanol (67-56-1)		
NIOSH	NIOSH REL (TWA) (ppm)	200 ppm
NIOSH	NIOSH REL (STEL) (mg/m <sup>3</sup> )	325 mg/m <sup>3</sup>
NIOSH	NIOSH REL (STEL) (ppm)	250 ppm

### 8.2. Appropriate engineering controls

Appropriate engineering controls : Provide local exhaust or general room ventilation.

### 8.3. Individual protection measures/Personal protective equipment

#### Personal protective equipment:

Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

#### Hand protection:

Neoprene or nitrile rubber gloves

#### Eye protection:

Chemical goggles. Contact lenses should not be worn

#### Skin and body protection:

Wear suitable protective clothing

#### Respiratory protection:

NIOSH-certified organic vapor (black cartridge) respirator.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear solution. Slightly hazy solution.
Molecular mass	: 86.38 g/mol
Color	: No data available
Odor	: Alcohol.
Odor threshold	: No data available
Refractive index	: 1.338
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: < 0 °C (solution)
Freezing point	: No data available
Boiling point	: 68 °C (initial, methanol)
Flash point	: 11 °C
Auto-ignition temperature	: 464 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: Highly flammable liquid and vapor
Vapor pressure	: 100 mm Hg @ 21.2°C (methanol)
Relative vapor density at 20 °C	: 1.11 (methanol)
Relative density	: 0.816
% Volatiles	: > 90 %
Solubility	: Reacts with water.
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosion limits	: 6 - 36.5 vol % (lower; upper)

### 9.2. Other information

No additional information available

# MAGNESIUM METHOXIDE, 7-8% in methanol

## Safety Data Sheet

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

No additional information available

#### 10.2. Chemical stability

Stable.

#### 10.3. Possibility of hazardous reactions

Material decomposes slowly in contact with air by reaction with water and carbon dioxide.

#### 10.4. Conditions to avoid

Heat. Sparks. Open flame.

#### 10.5. Incompatible materials

Air. Water.

#### 10.6. Hazardous decomposition products

Magnesium oxide fumes. Methanol. Organic acid vapors.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity : Not classified

<b>MAGNESIUM METHOXIDE, 7-8% in methanol (109-88-6)</b>	
ATE US (oral)	111.111 mg/kg body weight
ATE US (dermal)	333.333 mg/kg body weight
ATE US (vapors)	3.333 mg/l/4h
<b>Methanol (67-56-1)</b>	
LC50 inhalation rat (ppm)	22500 ppm (Exposure time: 8 h)
ATE US (oral)	100 mg/kg body weight
ATE US (dermal)	300 mg/kg body weight
ATE US (vapors)	3 mg/l/4h

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye damage. Methanol causes concentric constriction of visual fields; decreased visual acuity; dilated, unresponsive pupils; pain, photophobia, blindness.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity – single exposure	: Causes damage to organs. May cause drowsiness or dizziness. Inhalation- methanol: May cause euphoria, muscular incoordination, headache, dizziness, vomiting, abdominal cramps, sweating, delirium, coma, convulsions.
Specific target organ toxicity – repeated exposure	: Not classified
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Inhalation- methanol: May cause euphoria, muscular incoordination, headache, dizziness, vomiting, abdominal cramps, sweating, delirium, coma, convulsions.
Symptoms/effects after inhalation	: Toxic if inhaled. Danger of serious damage to health by prolonged exposure through inhalation. May cause drowsiness or dizziness. Overexposure may cause: Coughing. Headache. Nausea. Visual disturbances.
Symptoms/effects after skin contact	: Toxic in contact with skin. Repeated exposure to this material can result in absorption through skin causing significant health hazard. Causes skin irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard. Oral toxicity is associated with methanol, the solvent and a hydrolysis product which causes nausea, vomiting, headache, visual effects including blindness.
Chronic symptoms	: On contact with water this compound liberates methanol which is known to have a chronic effect on the central nervous system. Methanol may affect the central nervous system resulting in persistent or recurring headaches or impaired vision.

### SECTION 12: Ecological information

#### 12.1. Toxicity

# MAGNESIUM METHOXIDE, 7-8% in methanol

## Safety Data Sheet

Methanol (67-56-1)	
LC50 fish 1	28200 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
LC50 fish 2	> 100 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])

### 12.2. Persistence and degradability

No additional information available

### 12.3. Bioaccumulative potential

Methanol (67-56-1)	
BCF fish 1	< 10
Log Pow	-0.77

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

Effect on the ozone layer : No additional information available

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.

Additional information : Handle empty containers with care because residual vapors are flammable.

Ecology - waste materials : Avoid release to the environment.

## SECTION 14: Transport information

### 14.1. UN number

UN-No.(DOT) : 1993  
DOT NA no. UN1993

### 14.2. UN proper shipping name

Transport document description : UN1993 Flammable liquids, n.o.s. (MAGNESIUM METHOXIDE, 7-8% in methanol), 3, II

Proper Shipping Name (DOT) : Flammable liquids, n.o.s.  
(MAGNESIUM METHOXIDE, 7-8% in methanol)

Class (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Packing group (DOT) : II - Medium Danger

Hazard labels (DOT) : 3 - Flammable liquid



DOT Packaging Non Bulk (49 CFR 173.xxx) : 202  
DOT Packaging Bulk (49 CFR 173.xxx) : 242  
DOT Packaging Exceptions (49 CFR 173.xxx) : 150  
DOT Symbols : G - Identifies PSN requiring a technical name

### 14.3. Additional information

Emergency Response Guide (ERG) Number : 128

Other information : No supplementary information available.

### Transport by sea

DOT Vessel Stowage Location : B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.

### Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 5 L  
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 60 L

# MAGNESIUM METHOXIDE, 7-8% in methanol

## Safety Data Sheet

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

##### Methanol (67-56-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Subject to reporting requirements of United States SARA Section 313

SARA Section 313 - Emission Reporting 1 %

##### Magnesium methoxide (109-88-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### 15.2. International regulations

##### CANADA

##### Methanol (67-56-1)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification Class B Division 2 - Flammable Liquid  
Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects  
Class D Division 2 Subdivision A - Very toxic material causing other toxic effects  
Class D Division 2 Subdivision B - Toxic material causing other toxic effects

##### Magnesium methoxide (109-88-6)

Listed on the Canadian NDSL (Non-Domestic Substances List)

#### EU-Regulations

##### Methanol (67-56-1)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

##### Magnesium methoxide (109-88-6)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

#### National regulations

##### Methanol (67-56-1)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Japanese Poisonous and Deleterious Substances Control Law  
Listed on the Canadian IDL (Ingredient Disclosure List)  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on CICR (Turkish Inventory and Control of Chemicals)

##### Magnesium methoxide (109-88-6)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Korean ECL (Existing Chemicals List)

#### 15.3. US State regulations

**WARNING:** This product can expose you to 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](http://www.P65Warnings.ca.gov).

##### Methanol (67-56-1)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
No	Yes	No	No		

##### Methanol (67-56-1)

U.S. - Massachusetts - Right To Know List  
U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List  
U.S. - Pennsylvania - RTK (Right to Know) List

### SECTION 16: Other information

# MAGNESIUM METHOXIDE, 7-8% in methanol

## Safety Data Sheet

### Full text of H-phrases::

H225	Highly flammable liquid and vapor
H301	Toxic if swallowed
H311	Toxic in contact with skin
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H331	Toxic if inhaled
H336	May cause drowsiness or dizziness
H370	Causes damage to organs

### Abbreviations and acronyms

: Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor.

### Hazard Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability : 4 Severe Hazard - Flammable gases, or very volatile flammable liquids with flash points below 73 F, and boiling points below 100 F. Materials may ignite spontaneously with air. (Class IA)

Physical : 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.

Prepared by safety and environmental affairs.

Date of issue: 12/30/2014 Version: 1.0

SDS US (GHS HazCom 2012) - Custom

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

*The information contained in this document has been gathered from reference materials and/or Gelest, Inc. test data and is to the best knowledge and belief of Gelest, Inc. accurate and reliable. Such information is offered solely for your consideration, investigation and verification. It is not suggested or guaranteed that the hazard precautions or procedures described are the only ones which exist. Gelest, Inc. makes no warranties, express or implied, with respect to the use of such information and assumes no responsibility therefore. Information on this safety data sheet is not intended to constitute a basis for product specifications.*

© 2019 Gelest Inc. Morrisville, PA 19067