

## SAFETY DATA SHEET

Creation Date 27-April-2009

Revision Date 25-March-2024

Revision Number 3

### 1. Identification

**Product Name** Methanol, AR Grade

**Cat No. :** R40049

**CAS-No** 67-56-1  
**Synonyms** Methyl alcohol

**Recommended Use** Laboratory chemicals.  
**Uses advised against** .

#### Details of the supplier of the safety data sheet

##### Company

##### **Importer/Distributor**

Fisher Scientific  
112 Colonnade Road,  
Ottawa, ON K2E 7L6,  
Canada  
Tel: 1-800-234-7437

##### **Emergency Telephone Number**

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11

Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99

**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

### 2. Hazard(s) identification

#### Classification

##### **WHMIS 2015 Classification**

Classified as hazardous under the Hazardous Products Regulations (SOR/2015-17)

|   |            |
|---|------------|
| <b>Flammable liquids</b>                                    | Category 2 |
| <b>Acute oral toxicity</b>                                  | Category 3 |
| <b>Acute dermal toxicity</b>                                | Category 3 |
| <b>Acute Inhalation Toxicity</b>                            | Category 3 |
| <b>Specific target organ toxicity (single exposure)</b>     | Category 1 |
| Target Organs - Optic nerve, Central nervous system (CNS).  |            |
| <b>Specific target organ toxicity - (repeated exposure)</b> | Category 1 |
| Target Organs - Kidney, Liver, spleen, Blood.               |            |

#### 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  
Causes damage to organs through prolonged or repeated exposure

**Precautionary Statements****Prevention**

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
Keep container tightly closed  
Ground/bond container and receiving equipment  
Use explosion-proof electrical/ventilating/lighting/equipment  
Do not breathe dust/fumes/gas/mist/vapours/spray  
Wash face, hands and any exposed skin 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  
Use non-sparking tools  
Take action to prevent static discharges

**Response**

IF SWALLOWED: Immediately call a POISON CENTER/doctor  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower  
IF INHALED: Remove person to fresh air and keep comfortable for breathing  
Call a POISON CENTER/ doctor  
Rinse mouth  
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish  
Take off contaminated clothing and wash it before reuse

**Storage**

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

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Other Hazards**

Poison, may be fatal or cause blindness if swallowed

### 3. Composition/Information on Ingredients

| Component | CAS-No  | Weight % |
|-----------|---------|----------|
| Methanol  | 67-56-1 | >95      |

### 4. First-aid measures

**General Advice**

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

|  |   |
|--|---|
| <b>Skin Contact</b>                    | Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.   |
| <b>Inhalation</b>                      | Remove to fresh air. If breathing is difficult, give oxygen. 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. Immediate medical attention is required. |
| <b>Ingestion</b>                       | Do NOT induce vomiting. Call a physician or poison control center immediately.  |
| <b>Most important symptoms/effects</b> | Difficulty in breathing. May cause blindness: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting   |
| <b>Notes to Physician</b>              | Treat symptomatically   |

## 5. Fire-fighting measures

|   |   |
|---|---|
| <b>Suitable Extinguishing Media</b>     | Water spray, carbon dioxide (CO <sub>2</sub> ), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers. |
| <b>Unsuitable Extinguishing Media</b>   | Water may be ineffective  |
| <b>Flash Point</b>                      | 10 °C / 50 °F   |
| <b>Method -</b>                         | CC (closed cup) Abel-Pensky (DIN 51755) Directive 84/449/EEC, A.9   |
| <b>Autoignition Temperature</b>         | 455 °C / 851 °F   |
| <b>Explosion Limits</b>                 |   |
| <b>Upper</b>                            | 31.00 vol %   |
| <b>Lower</b>                            | 6.0 vol %   |
| <b>Sensitivity to Mechanical Impact</b> | No information available  |
| <b>Sensitivity to Static Discharge</b>  | No information available  |

### Specific Hazards Arising from the Chemical

Flammable. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Vapors may form explosive mixtures with air.

### Hazardous Combustion Products

Carbon monoxide (CO). Formaldehyde.

### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

### NFPA

|               |                     |                    |                         |
|---------------|---------------------|--------------------|-------------------------|
| <b>Health</b> | <b>Flammability</b> | <b>Instability</b> | <b>Physical hazards</b> |
| 2             | 3                   | 0                  | N/A                     |

## 6. Accidental release measures

|   |  |
|---|--|
| <b>Personal Precautions</b>                 | Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Use personal protective equipment as required. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges. |
| <b>Environmental Precautions</b>            | Should not be released into the environment. See Section 12 for additional Ecological Information.   |
| <b>Methods for Containment and Clean Up</b> | Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.  |

## 7. Handling and storage

**Handling**

Wear personal protective equipment/face protection. Do not breathe mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

**Storage.**

Keep container tightly closed in a dry and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Flammables area. Incompatible Materials. Strong oxidizing agents. Strong acids. Acid anhydrides. Acid chlorides. Strong bases. Metals. Peroxides.

## 8. Exposure controls / personal protection

**Exposure Guidelines**

| Component | Alberta  | British Columbia                      | Ontario TWAEV                         | Quebec   | ACGIH TLV                             | OSHA PEL   | NIOSH  |
|-----------|--|---------------------------------------|---------------------------------------|--|---------------------------------------|--|--|
| Methanol  | TWA: 200 ppm<br>TWA: 262 mg/m <sup>3</sup><br>STEL: 250 ppm<br>STEL: 328 mg/m <sup>3</sup><br>Skin | TWA: 200 ppm<br>STEL: 250 ppm<br>Skin | TWA: 200 ppm<br>STEL: 250 ppm<br>Skin | TWA: 200 ppm<br>TWA: 262 mg/m <sup>3</sup><br>STEL: 250 ppm<br>STEL: 328 mg/m <sup>3</sup><br>Skin | TWA: 200 ppm<br>STEL: 250 ppm<br>Skin | (Vacated) TWA: 200 ppm<br>(Vacated) TWA: 260 mg/m <sup>3</sup><br>(Vacated) STEL: 250 ppm<br>(Vacated) STEL: 325 mg/m <sup>3</sup><br>Skin<br>TWA: 200 ppm<br>TWA: 260 mg/m <sup>3</sup> | IDLH: 6000 ppm<br>TWA: 200 ppm<br>TWA: 260 mg/m <sup>3</sup><br>STEL: 250 ppm<br>STEL: 325 mg/m <sup>3</sup> |

**Legend**

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH: NIOSH - National Institute for Occupational Safety and Health

**Engineering Measures**

Use only under a chemical fume hood. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

**Personal protective equipment****Eye Protection**

Tight sealing safety goggles

**Hand Protection**

Protective gloves

| Glove material | Breakthrough time | Glove thickness | Glove comments   |
|----------------|-------------------|-----------------|--|
| Butyl rubber   | > 480 minutes     | 0.35 mm         | As tested under EN374-3                                |
| Viton (R)      | > 480 minutes     | 0.70 mm         | Determination of Resistance to Permeation by Chemicals |

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

**Respiratory Protection**

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly  
**Recommended Filter type:** low boiling organic solvent Type AX Brown conforming to EN371

When RPE is used a face piece Fit Test should be conducted

#### **Environmental exposure controls**

No information available.

#### **Hygiene Measures**

When using do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing.

## 9. Physical and chemical properties

|   |   |
|---|---|
| <b>Physical State</b>                         | Liquid  |
| <b>Appearance</b>                             | Colorless   |
| <b>Odor</b>                                   | Alcohol-like  |
| <b>Odor Threshold</b>                         | No information available  |
| <b>pH</b>                                     | No information available  |
| <b>Melting Point/Range</b>                    | -98 °C / -144.4 °F  |
| <b>Boiling Point/Range</b>                    | 64.7 °C / 148.5 °F @ 760 mmHg                                     |
| <b>Flash Point</b>                            | 10 °C / 50 °F   |
| <b>Method -</b>                               | CC (closed cup) Abel-Pensky (DIN 51755) Directive 84/449/EEC, A.9 |
| <b>Evaporation Rate</b>                       | 5.2 (ether = 1)   |
| <b>Flammability (solid,gas)</b>               | Not applicable  |
| <b>Flammability or explosive limits</b>       |   |
| <b>Upper</b>                                  | 31.00 vol %   |
| <b>Lower</b>                                  | 6.0 vol %   |
| <b>Vapor Pressure</b>                         | 128 hPa @ 20 °C   |
| <b>Vapor Density</b>                          | 1.11  |
| <b>Specific Gravity</b>                       | 0.791   |
| <b>Solubility</b>                             | Miscible with water   |
| <b>Partition coefficient; n-octanol/water</b> | No data available   |
| <b>Autoignition Temperature</b>               | 455 °C / 851 °F   |
| <b>Decomposition Temperature</b>              | No information available  |
| <b>Viscosity</b>                              | 0.55 cP at 20 °C  |
| <b>Molecular Formula</b>                      | C H4 O  |
| <b>Molecular Weight</b>                       | 32.04   |
| <b>VOC Content(%)</b>                         | 100   |
| <b>Surface tension</b>                        | 0.02255 N/m @ 20°C  |

## 10. Stability and reactivity

|   |   |
|---|---|
| <b>Reactive Hazard</b>                  | None known, based on information available  |
| <b>Stability</b>                        | Stable under normal conditions.   |
| <b>Conditions to Avoid</b>              | Incompatible products. Heat, flames and sparks. Keep away from open flames, hot surfaces and sources of ignition. |
| <b>Incompatible Materials</b>           | Strong oxidizing agents, Strong acids, Acid anhydrides, Acid chlorides, Strong bases, Metals, Peroxides           |
| <b>Hazardous Decomposition Products</b> | Carbon monoxide (CO), Formaldehyde  |
| <b>Hazardous Polymerization</b>         | Hazardous polymerization does not occur.  |
| <b>Hazardous Reactions</b>              | None under normal processing.   |

## 11. Toxicological information

### Acute Toxicity

#### Product Information

#### Component Information

| Component | LD50 Oral                      | LD50 Dermal                   | LC50 Inhalation               |
|-----------|--------------------------------|-------------------------------|-------------------------------|
| Methanol  | LD50 = 1187 – 2769 mg/kg (Rat) | LD50 = 17100 mg/kg ( Rabbit ) | LC50 = 128.2 mg/L ( Rat ) 4 h |

**Toxicologically Synergistic Products** Carbon tetrachloride

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Irritation** May cause skin and eye irritation

**Sensitization** No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component | CAS-No  | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|-----------|---------|------------|------------|------------|------------|------------|
| Methanol  | 67-56-1 | Not listed | Not listed | Not listed | Not listed | Not listed |

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** Component substance is listed on California Proposition 65 as a developmental hazard.

**Teratogenicity** No information available.

**STOT - single exposure** Optic nerve Central nervous system (CNS)  
**STOT - repeated exposure** Kidney Liver spleen Blood

**Aspiration hazard** No information available

**Symptoms / effects, both acute and delayed** May cause blindness: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

### Ecotoxicity

| Component | Freshwater Algae | Freshwater Fish                            | Microtox  | Water Flea            |
|-----------|------------------|--|---|-----------------------|
| Methanol  | Not listed       | Pimephales promelas: LC50 > 10000 mg/L 96h | EC50 = 39000 mg/L 25 min<br>EC50 = 40000 mg/L 15 min<br>EC50 = 43000 mg/L 5 min | EC50 > 10000 mg/L 24h |

**Persistence and Degradability** Persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Will likely be mobile in the environment due to its volatility.

| Component | log Pow |
|-----------|---------|
| Methanol  | -0.74   |

## 13. Disposal considerations

**Waste Disposal Methods** Should not be released into the environment.

| Component          | RCRA - U Series Wastes | RCRA - P Series Wastes |
|--------------------|------------------------|------------------------|
| Methanol - 67-56-1 | U154                   | -                      |

## 14. Transport information

### DOT

|                      |          |
|----------------------|----------|
| UN-No                | UN1230   |
| Proper Shipping Name | METHANOL |
| Hazard Class         | 3        |
| Packing Group        | II       |

### TDG

|                         |          |
|-------------------------|----------|
| UN-No                   | UN1230   |
| Proper Shipping Name    | METHANOL |
| Hazard Class            | 3        |
| Subsidiary Hazard Class | 6.1      |
| Packing Group           | II       |

### IATA

|                         |          |
|-------------------------|----------|
| UN-No                   | UN1230   |
| Proper Shipping Name    | METHANOL |
| Hazard Class            | 3        |
| Subsidiary Hazard Class | 6.1      |
| Packing Group           | II       |

### IMDG/IMO

|                         |          |
|-------------------------|----------|
| UN-No                   | UN1230   |
| Proper Shipping Name    | METHANOL |
| Hazard Class            | 3        |
| Subsidiary Hazard Class | 6.1      |
| Packing Group           | II       |

## 15. Regulatory information

### International Inventories

| Component | CAS-No  | DSL | NDSL | TSCA | TSCA Inventory notification - Active-Inactive | EINECS    | ELINCS | NLP |
|-----------|---------|-----|------|------|---|-----------|--------|-----|
| Methanol  | 67-56-1 | X   | -    | X    | ACTIVE  | 200-659-6 | -      | -   |

| Component | CAS-No  | IECSC | KECL     | ENCS | ISHL | TCSI | AICS | NZIoC | PICCS |
|-----------|---------|-------|----------|------|------|------|------|-------|-------|
| Methanol  | 67-56-1 | X     | KE-23193 | X    | X    | X    | X    | X     | X     |

### Legend:

X - Listed '-' - Not Listed

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

### Canada

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and meets the requirements of the HPR (Paragraph 13(1)(a) of the Hazardous Products Act (HPA)).

| Component | Canada - National Pollutant Release Inventory (NPRI)              | Canadian Environmental Protection Agency (CEPA) - List of Toxic Substances | Canada's Chemicals Management Plan (CEPA) |
|-----------|---|--|---|
| Methanol  | Part 1, Group A Substance<br>Part 5, Individual Substances Part 4 |  |   |

|  |           |  |  |
|--|-----------|--|--|
|  | Substance |  |  |
|--|-----------|--|--|

## Other International Regulations

## Authorisation/Restrictions according to EU REACH

| Component | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances  | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|-----------|---|--|---|
| Methanol  | -   | Use restricted. See item 69.<br>(see link for restriction details)<br>Use restricted. See item 75.<br>(see link for restriction details) | -   |

## REACH links

<https://echa.europa.eu/substances-restricted-under-reach>

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

| Component | CAS-No  | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|-----------|---------|----------|------------------------------|---------------------------|--|
| Methanol  | 67-56-1 | Listed   | Not applicable               | Not applicable            | Not applicable                             |

| Component | CAS-No  | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|-----------|---------|---|--|----------------------------|------------------------------------|
| Methanol  | 67-56-1 | 500 tonne   | 5000 tonne   | Not applicable             | Not applicable                     |

## 16. Other information

## Prepared By

Product Safety Department  
Email: chem.techinfo@thermofisher.com  
www.thermofisher.com

## Creation Date

27-April-2009

## Revision Date

25-March-2024

## Print Date

25-March-2024

## Revision Summary

New emergency telephone response service provider.

## Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**