

## SAFETY DATA SHEET

Creation Date 15-Sep-2009

Revision Date 28-Mar-2024

Revision Number 6

### 1. Identification

**Product Name** Methanol-d4

**Cat No. :** 42318

**CAS No** 811-98-3  
**Synonyms** Methyl-d3 alcohol-d

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Food, drug, pesticide or biocidal product use.

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

##### Company

Thermo Fisher Scientific Chemicals, Inc.  
30 Bond Street  
Ward Hill, MA 01835-8099  
Tel: 800-343-0660  
Fax: 800-322-4757

##### **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**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|  |            |
|--|------------|
| Flammable liquids  | Category 2 |
| Acute oral toxicity  | Category 3 |
| Acute dermal toxicity                                      | Category 3 |
| Acute Inhalation Toxicity - Vapors                         | Category 3 |
| Specific target organ toxicity (single exposure)           | Category 1 |
| Target Organs - Central nervous system (CNS), Optic nerve. |            |

#### 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



### Precautionary Statements

#### Prevention

Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Wear protective gloves/protective clothing/eye protection/face protection  
Use only outdoors or in a well-ventilated area  
Do not breathe dust/fume/gas/mist/vapors/spray  
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  
Keep cool

#### Response

IF exposed: Call a POISON CENTER or doctor/physician

#### Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
Call a POISON CENTER or doctor/physician

#### Skin

Call a POISON CENTER or doctor/physician if you feel unwell  
Wash contaminated clothing before reuse  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

#### Ingestion

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician  
Rinse mouth

#### Fire

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction

#### 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

#### Hazards not otherwise classified (HNOC)

WARNING. Reproductive Harm - <https://www.p65warnings.ca.gov/>.

## 3. Composition/Information on Ingredients

| Component      | CAS No   | Weight % |
|----------------|----------|----------|
| Methanol-d4    | 811-98-3 | >95      |
| Methyl alcohol | 67-56-1  | -        |

## 4. First-aid measures

### General Advice

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

|  |  |
|--|--|
| <b>Eye Contact</b>                         | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.   |
| <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 not breathing, give artificial respiration. 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 and effects</b> | . 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>     | CO <sub>2</sub> , dry chemical, dry sand, 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>                      | 12 °C / 53.6 °F   |
| <b>Method -</b>                         | No information available  |
| <b>Autoignition Temperature</b>         | 455 °C / 851 °F   |
| <b>Explosion Limits</b>                 |   |
| <b>Upper</b>                            | 44 vol %  |
| <b>Lower</b>                            | 4.4 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. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

### Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). 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

**Health**  
3

**Flammability**  
3

**Instability**  
1

**Physical hazards**  
N/A

## 6. Accidental release measures

|                                  |  |
|----------------------------------|--|
| <b>Personal Precautions</b>      | Use personal protective equipment as required. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Remove all sources of ignition. Take precautionary measures against static discharges. |
| <b>Environmental Precautions</b> | Should not be released into the environment.   |

**Methods for Containment and Clean Up** 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 get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. 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 containers tightly closed in a dry, cool and well-ventilated place. Flammables area. Keep away from heat, sparks and flame. Protect from moisture. Keep under nitrogen. Incompatible Materials. Metals. Halogens. Strong acids. Acid anhydrides. Acid chlorides. Peroxides. Strong bases. Oxidizing agent.

## 8. Exposure controls / personal protection

### Exposure Guidelines

| Component      | ACGIH TLV                             | OSHA PEL   | NIOSH  | Mexico OEL (TWA)              |
|----------------|---------------------------------------|--|--|-------------------------------|
| Methyl alcohol | 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> | TWA: 200 ppm<br>STEL: 250 ppm |

### 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** Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

### Personal Protective Equipment

**Eye/face Protection** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin and body protection** Wear appropriate protective gloves and clothing to prevent skin exposure.

**Respiratory Protection** 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.

**Recommended Filter type:** low boiling organic solvent. Type AX. Brown. conforming to EN371.

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

## 9. Physical and chemical properties

**Physical State** Liquid  
**Appearance** Colorless

|  |                          |
|--|--------------------------|
| Odor                                   | Alcohol                  |
| Odor Threshold                         | No information available |
| pH                                     | No information available |
| Melting Point/Range                    | -99 °C / -146.2 °F       |
| Boiling Point/Range                    | 65 °C / 149 °F           |
| Flash Point                            | 12 °C / 53.6 °F          |
| Evaporation Rate                       | No information available |
| Flammability (solid,gas)               | Not applicable           |
| Flammability or explosive limits       |                          |
| Upper                                  | 44 vol %                 |
| Lower                                  | 4.4 vol %                |
| Vapor Pressure                         | 128 mbar @ 20°C          |
| Vapor Density                          | No information available |
| Specific Gravity                       | 0.888                    |
| Solubility                             | No information available |
| Partition coefficient; n-octanol/water | No data available        |
| Autoignition Temperature               | 455 °C / 851 °F          |
| Decomposition Temperature              | No information available |
| Viscosity                              | No information available |
| Molecular Formula                      | C D4 O                   |
| Molecular Weight                       | 36.06                    |

## 10. Stability and reactivity

|                                  |   |
|----------------------------------|---|
| Reactive Hazard                  | None known, based on information available  |
| Stability                        | Hygroscopic.  |
| Conditions to Avoid              | Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition. Exposure to moist air or water. |
| Incompatible Materials           | Metals, Halogens, Strong acids, Acid anhydrides, Acid chlorides, Peroxides, Strong bases, Oxidizing agent                             |
| Hazardous Decomposition Products | Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Formaldehyde   |
| Hazardous Polymerization         | Hazardous polymerization does not occur.  |
| Hazardous Reactions              | None under normal processing.   |

## 11. Toxicological information

### Acute Toxicity

|                     |   |
|---------------------|---|
| Product Information | Methanol is more toxic to humans and primates than to most experimental animals, due to differences in how it is metabolized. Non-primates do not appear to experience the acidosis or vision effects observed in humans and primates |
|---------------------|---|

### Component Information

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

|                                      |                          |
|--------------------------------------|--------------------------|
| Toxicologically Synergistic Products | No information available |
|--------------------------------------|--------------------------|

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

|                 |  |
|-----------------|--|
| Irritation      | No information available   |
| 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-d4    | 811-98-3 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Methyl alcohol | 67-56-1  | Not listed | Not listed | Not listed | Not listed | Not listed |

**Mutagenic Effects** No information available

**Reproductive Effects** California Proposition 65. Reproductive toxicity.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** Central nervous system (CNS) Optic nerve

**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects, both acute and delayed** 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

This product contains the following substance(s) which are hazardous for the environment.

| Component      | Freshwater Algae | Freshwater Fish                            | Microtox  | Water Flea            |
|----------------|------------------|--|---|-----------------------|
| Methanol-d4    | Not listed       | Rainbow trout: LC50: 19000 mg/L/96H        | Not listed  | EC50: 24500 mg/L/48H  |
| Methyl alcohol | 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 |
|----------------|---------|
| Methyl alcohol | -0.74   |

## 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

| Component                | RCRA - U Series Wastes | RCRA - P Series Wastes |
|--------------------------|------------------------|------------------------|
| Methyl alcohol - 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

|                                |          |
|--------------------------------|----------|
| <b>Subsidiary Hazard Class</b> | 6.1      |
| <b>Packing Group</b>           | II       |
| <b>IATA</b>                    |          |
| <b>UN-No</b>                   | UN1230   |
| <b>Proper Shipping Name</b>    | Methanol |
| <b>Hazard Class</b>            | 3        |
| <b>Subsidiary Hazard Class</b> | 6.1      |
| <b>Packing Group</b>           | II       |
| <b>IMDG/IMO</b>                |          |
| <b>UN-No</b>                   | UN1230   |
| <b>Proper Shipping Name</b>    | Methanol |
| <b>Hazard Class</b>            | 3        |
| <b>Subsidiary Hazard Class</b> | 6.1      |
| <b>Packing Group</b>           | II       |

## 15. Regulatory information

### United States of America Inventory

| Component      | CAS No   | TSCA | TSCA Inventory notification - Active-Inactive | TSCA - EPA Regulatory Flags |
|----------------|----------|------|---|-----------------------------|
| Methanol-d4    | 811-98-3 | X    | ACTIVE  | -                           |
| Methyl alcohol | 67-56-1  | X    | ACTIVE  | -                           |

#### Legend:

**TSCA** US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

#### TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)

Not applicable

#### TSCA 12(b) - Notices of Export

Not applicable

### International Inventories

Canada (DSL/NDL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

| Component      | CAS No   | DSL | NDL | EINECS    | PICCS | ENCS | ISHL | AICS | IECSC | KECL     |
|----------------|----------|-----|-----|-----------|-------|------|------|------|-------|----------|
| Methanol-d4    | 811-98-3 | -   | X   | 212-378-6 | X     | -    |      | X    | X     | -        |
| Methyl alcohol | 67-56-1  | X   | -   | 200-659-6 | X     | X    | X    | X    | X     | KE-23193 |

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

### U.S. Federal Regulations

#### SARA 313

| Component      | CAS No  | Weight % | SARA 313 - Threshold Values % | SARA 313 - Reporting thresholds |
|----------------|---------|----------|-------------------------------|---------------------------------|
| Methyl alcohol | 67-56-1 | -        | 1.0 %                         | -                               |

#### SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

#### CWA (Clean Water Act)

Not applicable

#### Clean Air Act

| Component | HAPS Data | Class 1 Ozone Depletors | Class 2 Ozone Depletors |
|-----------|-----------|-------------------------|-------------------------|
|-----------|-----------|-------------------------|-------------------------|

|                |   |  |   |
|----------------|---|--|---|
| Methyl alcohol | X |  | - |
|----------------|---|--|---|

OSHA - Occupational Safety and Health Administration Not applicable

**CERCLA**

| Component      | Hazardous Substances RQs | CERCLA Extremely Hazardous Substances RQs | SARA Reportable Quantity (RQ) |
|----------------|--------------------------|---|-------------------------------|
| Methyl alcohol | 5000 lb                  | -   | 5000 lb<br>2270 kg            |

**California Proposition 65** This product contains the following Proposition 65 chemicals.

| Component      | CAS No  | California Prop. 65 | Prop 65 NSRL | Category      |
|----------------|---------|---------------------|--------------|---------------|
| Methyl alcohol | 67-56-1 | Developmental       | -            | Developmental |

**U.S. State Right-to-Know Regulations**

| Component      | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|----------------|---------------|------------|--------------|----------|--------------|
| Methyl alcohol | X             | X          | X            | X        | X            |

**U.S. Department of Transportation**

Reportable Quantity (RQ): Y  
DOT Marine Pollutant N  
DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security** This product does not contain any DHS chemicals.

**Other International Regulations**

**Mexico - Grade** Serious risk, Grade 3

**Authorisation/Restrictions according to EU REACH**

| Component      | CAS No   | 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-d4    | 811-98-3 | -   | -  | -   |
| Methyl alcohol | 67-56-1  | -   | 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-d4    | 811-98-3 | Not applicable | Not applicable | Not applicable | Not applicable    |
| Methyl alcohol | 67-56-1  | Listed         | Not applicable | Not applicable | Not applicable    |

**Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?**

Not applicable

**Other International Regulations**

| 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-d4    | 811-98-3 | Not applicable  | Not applicable   | Not applicable             | Not applicable                     |
| Methyl alcohol | 67-56-1  | 500 tonne   | 5000 tonne   | Not applicable             | Not applicable                     |

**16. Other information****Prepared By**

Health, Safety and Environmental Department  
Email: chem.techinfo@thermofisher.com  
www.thermofisher.com

**Creation Date**

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28-Mar-2024

**Print Date**

28-Mar-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**