

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**
**Product Identifier**

Perihal Produk:

**Methanol**

Product Description:

**Methanol**

Cat No. :

A413-4; A413-20; A413-200; A413-500

Synonyms

Methyl alcohol

CAS No

67-56-1

Molecular Formula

 C H<sub>4</sub> O

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

Recommended Use

Laboratory chemicals.

Uses advised against

**Company**

 Thermo Fisher Scientific Fisher Scientific (M) Sdn Bhd  
 Hap Seng Business Park, Lot 01-03, 01-04 Aras 1 Unity Square,  
 No 12, Persiaran Perusahaan, Seksyen 23, 40300 Shah Alam,  
 Selangor Darul Ehsan, Malaysia.  
 Main line: +60 3-5525 7888

**E-mail address**

Enquiry.my@thermofisher.com

**Emergency Telephone Number**

 Tel: +03-5525 7888  
 CHEMTREC Malaysia **1-800-815-308** (Malay)  
 CHEMTREC Malaysia (Kuala Lumpur) **+(60)-327884561** (Malay)

**SECTION 2: HAZARDS IDENTIFICATION**
**Classification of the substance or mixture**

|                                                    |                   |
|----------------------------------------------------|-------------------|
| Flammable liquids                                  | Category 2 (H225) |
| Acute oral toxicity                                | Category 3 (H301) |
| Acute dermal toxicity                              | Category 3 (H311) |
| Acute Inhalation Toxicity - Vapors                 | Category 3 (H331) |
| Specific target organ toxicity - (single exposure) | Category 1 (H370) |

**Label Elements**


Signal Word

Danger

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## Hazard Statements

H225 - Highly flammable liquid and vapor

H301 + H311 + H331 - Toxic if swallowed, in contact with skin or if inhaled

H370 - Causes damage to organs: Optic nerve, Central nervous system (CNS)

## Precautionary Statements

### Prevention

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

P233 - Keep container tightly closed

P240 - Ground and bond container and receiving equipment

P241 - Use explosion-proof electrical/ ventilating/ lighting equipment

P242 - Use non-sparking tools

P243 - Take action to prevent static discharges

P264 - Wash face, hands and any exposed skin thoroughly after handling

P270 - Do not eat, drink or smoke when using this product

P271 - Use only outdoors or in a well-ventilated area

P280 - Wear protective gloves/protective clothing/eye protection/face protection

### Response

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P311 - Call a POISON CENTER or doctor

P330 - Rinse mouth

P362 + P364 - Take off contaminated clothing and wash it before reuse

P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

### Storage

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

P405 - Store locked up

### Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

## Other Hazards

Toxic to terrestrial vertebrates

This product does not contain any known or suspected endocrine disruptors

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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

## SECTION 4: FIRST AID MEASURES

### Description of 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.

#### Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

#### Ingestion

Do NOT induce vomiting. Call a physician or poison control center immediately.

#### Inhalation

Remove to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth

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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.

## **Self-Protection of the First Aider**

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Remove all sources of ignition. No artificial respiration, mouth-to-mouth or mouth to nose. Use suitable instruments/apparatus. Avoid contact with skin.

## **Most important symptoms and effects, both acute and delayed**

Difficulty in breathing. May cause blindness. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

## **Indication of any immediate medical attention and special treatment needed**

### **Notes to Physician**

Treat symptomatically. Symptoms may be delayed.

## **SECTION 5: FIREFIGHTING MEASURES**

### **Extinguishing media**

#### **Suitable Extinguishing Media**

Water spray, carbon dioxide (CO<sub>2</sub>), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.

#### **Extinguishing media which must not be used for safety reasons**

Do not use a solid water stream as it may scatter and spread fire.

### **Special hazards arising from the substance or mixture**

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.

### **Advice for fire-fighters**

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.

## **SECTION 6: ACCIDENTAL RELEASE MEASURES**

### **Personal Precautions, Protective Equipment and Emergency Procedures**

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.

### **Environmental precautions**

Should not be released into the environment. See Section 12 for additional Ecological Information.

### **Methods and Material for Containment and Cleaning 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.

### **Reference to Other Sections**

Refer to protective measures listed in Sections 8 and 13.

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## SECTION 7: HANDLING AND STORAGE

### Precautions for Safe 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.

### Conditions for Safe Storage, Including any Incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Flammables area.

### Specific End Uses

Use in laboratories.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

| Component      | Malaysia | ACGIH TLV                             | OSHA PEL                                                                                                                                                                                 |
|----------------|----------|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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> |

| Component      | European Union                                               | The United Kingdom                                                                                              | Germany                                                        |
|----------------|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| Methyl alcohol | TWA: 200 ppm 8 hr<br>TWA: 260 mg/m <sup>3</sup> 8 hr<br>Skin | WEL - TWA: 200 ppm TWA; 266<br>mg/m <sup>3</sup> TWA<br>WEL - STEL: 250 ppm STEL; 333<br>mg/m <sup>3</sup> STEL | 100 ppm TWA MAK; 130 mg/m <sup>3</sup><br>TWA MAKSkin absorber |

### Exposure Controls

#### 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

#### Skin and body protection

Long sleeved clothing

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure 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.

Remove gloves with care avoiding skin contamination.

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## Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators

## Recommended Filter type:

low boiling organic solvent Type AX Brown conforming to EN371

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

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

## Hygiene Measures

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

## Environmental exposure controls

No information available

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

#### Appearance

Colorless

#### Physical State

Liquid

#### Odor

Alcohol-like

#### Odor Threshold

No data available

#### pH

No information available

#### Melting Point/Range

-98 °C / -144.4 °F

#### Softening Point

No data available

#### Boiling Point/Range

64.7 °C / 148.5 °F

#### Flash Point

10 °C / 50 °F

@ 760 mmHg

**Method -** CC (closed cup) Abel-Pensky (DIN 51755) Directive 84/449/EEC, A.9

#### Evaporation Rate

5.2 (ether = 1)

#### Flammability (solid,gas)

Not applicable

Liquid

#### Explosion Limits

**Lower** 6 vol%

**Upper** 31 vol%

#### Vapor Pressure

128 hPa @ 20 °C

#### Vapor Density

1.11

(Air = 1.0)

#### Specific Gravity / Density

0.791

#### Bulk Density

Not applicable

Liquid

#### Water Solubility

Miscible

#### Solubility in other solvents

No information available

#### Partition Coefficient (n-octanol/water)

##### Component

**log Pow**

Methyl alcohol

-0.74

#### Autoignition Temperature

455 °C / 851 °F

#### Decomposition Temperature

No data available

#### Viscosity

0.55 cP at 20 °C

#### Explosive Properties

Not explosive

Vapors may form explosive mixtures with air

#### Oxidizing Properties

No information available

#### Molecular Formula

C H4 O

#### Molecular Weight

32.04

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VOC Content(%) 100  
Surface tension 0.02255 N/m @ 20°C

## SECTION 10: STABILITY AND REACTIVITY

### Reactivity

None known, based on information available.

### Chemical Stability

Stable under normal conditions.

### Possibility of Hazardous Reactions

**Hazardous Polymerization** Hazardous polymerization does not occur.  
**Hazardous Reactions** None under normal processing.

### Conditions to Avoid

Incompatible products. Heat, flames and sparks. Keep away from open flames, hot surfaces and sources of ignition.

### Incompatible Materials

Strong oxidizing agents. Strong acids. Acid anhydrides. Acid chlorides. Strong bases. Metals. Peroxides.

### Hazardous Decomposition Products

Carbon monoxide (CO). Formaldehyde.

## SECTION 11: TOXICOLOGICAL INFORMATION

### Information on Toxicological Effects

#### Product Information

(a) acute toxicity;  
Oral Category 3  
Dermal Category 3  
Inhalation Category 3

| 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 |

(b) skin corrosion/irritation; Based on available data, the classification criteria are not met

(c) serious eye damage/irritation; Based on available data, the classification criteria are not met

(d) respiratory or skin sensitization;  
Respiratory Based on available data, the classification criteria are not met

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## Skin

Based on available data, the classification criteria are not met

| Component                         | Test method                                                       | Test species | Study result    |
|-----------------------------------|-------------------------------------------------------------------|--------------|-----------------|
| Methyl alcohol<br>67-56-1 ( >95 ) | OECD Test Guideline 406<br>Guinea Pig Maximisation Test<br>(GPMT) | guinea pig   | non-sensitising |

## (e) germ cell mutagenicity;

Based on available data, the classification criteria are not met

## (f) carcinogenicity;

Based on available data, the classification criteria are not met

There are no known carcinogenic chemicals in this product

## (g) reproductive toxicity;

Based on available data, the classification criteria are not met

| Component                         | Test method             | Test species / Duration          | Study result              |
|-----------------------------------|-------------------------|----------------------------------|---------------------------|
| Methyl alcohol<br>67-56-1 ( >95 ) | OECD Test Guideline 416 | Rat / Inhalation<br>2 Generation | NOAEC =<br>1.3 mg/l (air) |

## Developmental Effects

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

## (h) STOT-single exposure;

Category 1

## Results / Target organs

Optic nerve, Central nervous system (CNS).

## (i) STOT-repeated exposure;

Based on available data, the classification criteria are not met

## Target Organs

None known.

## (j) aspiration hazard;

Based on available data, the classification criteria are not met

## 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 Disrupting Properties

Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

## SECTION 12: ECOLOGICAL INFORMATION

### Ecotoxicity effects

| Component      | Freshwater Fish                               | Water Flea            | Freshwater Algae | Microtox                                                                        |
|----------------|-----------------------------------------------|-----------------------|------------------|---------------------------------------------------------------------------------|
| Methyl alcohol | Pimephales promelas:<br>LC50 > 10000 mg/L 96h | EC50 > 10000 mg/L 24h |                  | EC50 = 39000 mg/L 25 min<br>EC50 = 40000 mg/L 15 min<br>EC50 = 43000 mg/L 5 min |

### Persistence and degradability

Readily biodegradable

#### Persistence

Persistence is unlikely, based on information available.

| Component                         | Degradability                  |
|-----------------------------------|--------------------------------|
| Methyl alcohol<br>67-56-1 ( >95 ) | DT50 ~ 17.2d<br>>94% after 20d |

### Bioaccumulative potential

Bioaccumulation is unlikely

| Component      | log Pow | Bioconcentration factor (BCF) |
|----------------|---------|-------------------------------|
| Methyl alcohol | -0.74   | <10 dimensionless             |

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|                                               |                                                                                                                                                                                                |
|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b><u>Mobility in soil</u></b>                | The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces. Will likely be mobile in the environment due to its volatility. Disperses rapidly in air. |
| <b>Surface tension</b>                        | 0.02255 N/m @ 20°C                                                                                                                                                                             |
| <b><u>Endocrine Disruptor Information</u></b> | This product does not contain any known or suspected endocrine disruptors                                                                                                                      |
| <b><u>Other adverse effects</u></b>           | No information available                                                                                                                                                                       |

## SECTION 13: DISPOSAL CONSIDERATIONS

|                                            |                                                                                                                                                                                                                                        |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b><u>Waste treatment methods</u></b>      |                                                                                                                                                                                                                                        |
| <b>Waste from Residues/Unused Products</b> | Waste is classified as hazardous Dispose of in accordance with the European Directives on waste and hazardous waste Dispose of in accordance with local regulations                                                                    |
| <b>Contaminated Packaging</b>              | Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous Keep product and empty container away from heat and sources of ignition |
| <b>Other Information</b>                   | Waste codes should be assigned by the user based on the application for which the product was used Do not flush to sewer Can be landfilled or incinerated, when in compliance with local regulations                                   |

## SECTION 14: TRANSPORT INFORMATION

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

|                                       |          |
|---------------------------------------|----------|
| <b><u>Road and Rail Transport</u></b> |          |
| <b>UN-No</b>                          | UN1230   |
| <b>Hazard Class</b>                   | 3        |
| <b>Subsidiary Hazard Class</b>        | 6.1      |
| <b>Packing Group</b>                  | II       |
| <b>Proper Shipping Name</b>           | METHANOL |

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

|                                     |                                 |
|-------------------------------------|---------------------------------|
| <b>Special Precautions for User</b> | No special precautions required |
|-------------------------------------|---------------------------------|

## SECTION 15: REGULATORY INFORMATION



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

### International Inventories

X = listed

| Component      | EINECS    | TSCA | DSL | PICCS | ENCS | ISHL | IECSC | AICS | KECL     |
|----------------|-----------|------|-----|-------|------|------|-------|------|----------|
| Methyl alcohol | 200-659-6 | X    | X   | X     | X    | X    | X     | X    | KE-23193 |

| Component      | 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) |
|----------------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------|------------------------------------|
| Methyl alcohol | 500 tonne                                                                                 | 5000 tonne                                                                               |                            |                                    |

### National Regulations

#### Persistent Organic Pollutant Ozone Depletion Potential

This product does not contain any known or suspected substance  
This product does not contain any known or suspected substance

## SECTION 16: OTHER INFORMATION

### Legend

**CAS** - Chemical Abstracts Service

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

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**IECSC** - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

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

**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List

**ENCS** - Japanese Existing and New Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

**WEL** - Workplace Exposure Limit

**ACGIH** - American Conference of Governmental Industrial Hygienists

**RPE** - Respiratory Protective Equipment

**LC50** - Lethal Concentration 50%

**POW** - Partition coefficient Octanol:Water

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**OECD** - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**ATE** - Acute Toxicity Estimate

**VOC** - (Volatile Organic Compound)

### **Key literature references and sources for data**

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

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Revision Summary

Not applicable.

**In accordance with local and national regulations: Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013**

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## 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 Safety Data Sheet**