Elite Advanced Materials Sdn Bhd

# SAFETY DATA SHEET

According to Regulation (EC) No453/2010

SDS –MEOH-0001
Version 1.1
Revision Date: 30.06.2022
Printing Date: 30.06.2022

www.eamaterials.com

## Section 1: IDENTIFICATION OF SUBSTANCE/ MIXTURE AND OF THE COMPANY

### 1.1 Product identifier

Product name : **Methanol**

Including product code : MEOH006-2.5P, MEOH006-3.8P, MEOH006-10P, MEOH006-25P

### 1.2 Relevant identified uses of the substance or mixture

Identified uses : Laboratory chemicals, Manufacture of substances

Uses advised against : Not applicable

### 1.3 Details of the supplier of the safety datasheet

Company : Elite Advanced Materials Sdn Bhd
No 1, Jalan KPK 1/2, Kawasan Perindustrian Kundang, 48020 Rawang, Selangor, Malaysia

E-mail address : enquiry@eamaterials.com

### 1.4 Emergency telephone number

Emergency : +603-60343766 (Local business hours only)

## Section 2: HAZARDS INDENTIFICATION

### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

| | |
|---|---|
| Flammable liquids | Category 2 |
| Acute toxicity, Oral | Category 3 |
| Acute toxicity, Inhalation | Category 3 |
| Acute toxicity, Dermal | Category 3 |
| Specific target organ toxicity – single exposure | Category 1 |

### 2.2 Label elements

Labeling in compliance to Regulation (EC) No. 1272/2008 [CLP/GHS]

Hazard pictograms

**GHS02** **GHS06** **GHS08**

Signal word

Danger

Hazard statement

| | |
|---|---|
| H225 | Highly flammable liquid and vapour |
| H301 + H311 + H331 | Toxic if swallowed, in contact with skin or if inhaled. |
| H336 | Causes damage to organs (Eyes). |

Precautionary statements

| | |
|---|---|
| P210 | Keep away from heat/ sparks/open flames/hot surfaces. — No smoking |
| P240 | Ground/bond container and receiving equipment. |
| P280 | Wear protective gloves/ protective clothing/ eye protection/ face Protection. |

Storage

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

### 2.3 Other hazards

Not available

## Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substance

| | | |
|---|---|---|
| Synonyms | : | Methyl Alcohol, Methyl Hydroxide |
| Formula | : | $CH_4O$ |
| Molecular Weight | : | 32.04 g/mol |
| CAS-No. | : | 67-56-1 |

Hazardous components according to Regulation (EC) No 1272/2008

| Component | Identity | Classification Code | H-Code | Concentration |
|---|---|---|---|---|
| Methanol | CAS-No.: 67-56-1 | Flam. Liq. 2<br>Acute Tox. 3 (Oral)<br>Acute Tox. 3 (Dermal)<br>Acute Tox. 3 (Inh.)<br>STOT SE 1 | H225<br>H301<br>H311<br>H331<br>H370 | ≤ 100 % |

## Section 4: FIRST AID MEASURES

### 4.1 Description of First Aid measures

General information

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water for at least 15 minutes. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 4.2 Most important symptoms and delayed symptoms and effects

Irritant effects, Drowsiness, Dizziness, narcosis, agitation, spasms, inebriation, Nausea, Vomiting, Headache, blindness, Impairment of vision, Coma, Drying-out effect resulting in rough and chapped skin.

### 4.3 Indication of any immediate medical attention and special treatment

No data available.

## Section 5: FIRE FIGHTING MEASURES

### 5.1 Extinguishing media

Suitable extinguishing media

Foam, Carbon dioxide (CO2), Dry powder.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

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

Combustible.
Pay attention to flashback.
Vapours are heavier than air and may spread along floors.
Development of hazardous combustion gases or vapours possible in the event of fire.
Forms explosive mixtures with air at ambient temperatures.

### 5.3 Advice for fire-fighters

Special protective equipment for firefighters.
In the event of fire, wear self-contained breathing apparatus

### 5.4 Furtherinformation

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

## Section 6: ACCIDENTAL RELEASE MEASURES

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

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:
Protective equipment see section 8.

### 6.2 Environmental precautions

Do not let product enter drains. Risk of explosion.

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

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

### 6.4 Reference to other sections

Indications about waste treatment see section 13.

## Section 7: HANDLING AND STORAGE

### 7.1 Precaution for safe handling

Advice on safe handling
Observe label precautions.
Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Advice on protection against fire and explosion
Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures
Change contaminated clothing. Wash hands after working with substance.

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

Storage conditions
Protected from light.
Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.
Recommended storage temperature see product label.

### 7.3 Specific end use

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

| Component | ACGIH TLV (8 hr) | CAL/OSHA PEL (8 hr) | NIOSH REL (Up to 10 hr) |
|---|---|---|---|
| **Methanol** | TWA: 200 ppm<br>STEL: 250 ppm | TWA: 200 ppm<br>STEL: 250 ppm<br>CEIL: 1000 ppm | TWA: 200 ppm<br>STEL: 250 ppm |

(OSHA)

### 8.2 Exposure control

Personal protection measures, such as personal protective equipment

Never eat, drink or smoke during handling the chemical. Ensure that there is adequate ventilation, especially in confined areas.

**Eye/ face protection**

Face shield and safety glasses is required during handling. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Discard of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact*

Material: Butyl rubber
Minimum layer thickness: 0.7 mm
Break through time: > 480 min
Material tested: Butoject® (KCL 898)

Splash contact*

Material: Viton (R)
Minimum layer thickness: 0.70 mm
Break through time: > 120 min
Material tested: Vitoject® (KCL 890)

(Merck, 2019; Ver 1.8)

**Body protection**

Impervious clothing, Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

| | | |
|---|---|---|
| Physical state | : | Liquid |
| Color | : | Colorless |
| Odor | : | Characteristic, Pungent |
| Odor threshold | : | 10 - 20000 ppm |
| pH - value | : | Not determined |
| Melting point / Range | : | -98 °C |
| Boiling point / Range | : | 64.5 °C at 1,013 hPa |
| Flash point | : | 9.7 °C at 1,013 hPa. Tested according to Directive 92/69/EEC |
| Evaporation rate | : | 6.3<br>Reference substance: Diethylether<br>1.9<br>Reference substance: n-butyl acetate |
| Explosion limit – LEL | : | 5.5 % (V) |
| Explosion limit - UEL | : | 44 % (V) |
| Vapour pressure | : | 128 hPa at 20.0 °C |
| Vapor density (air = 1) | : | 1.11 |
| Density | : | 0.79 g/cm$^3$ at 20 °C |
| Bulk density | : | Not determined |
| Solubility(ies) | : | Not determined |
| Water solubility | : | Completely miscible |
| Partition coefficient: n-octanol/water | : | log Pow: -0.77<br>(experimental)<br>(Lit.) Bioaccumulation is not expected |
| Auto-ignition temperature | : | Not determined |
| Decomposition temperature | : | Distillable in an undecomposed state at normal pressure |
| Viscosity | : | 0.597 mPa.s at 20.0 °C |

| | | |
|---|---|---|
| Explosive properties | : | Not classified as explosive |
| Oxidising properties | : | Not determined |

(Merck, 2019; Ver 1.8)

### 9.2 Other information

| | | |
|---|---|---|
| Ignition temperature | : | 420°C at 1,013 hPa (Method: DIN 51794) |
| Minimum ignition energy | : | 0.14 mJ |
| Viscosity, kinematic | : | 0.54 – 0.59 $mm^2/s$ at 20 °C |
| Conductivity | : | < 1 µS/cm |

## Section 10: STABILITY AND REACTIVITY

### 10.1 Reactivity

Vapours may form explosive mixture with air

Formation of peroxides possible

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

### 10.3 Possibility of hazardous reactions

Risk of explosion with:
Oxidizing agents, perchloric acid, perchlorates, salts of oxyhalogenic acids, chromium(VI) oxide, halogen oxides, nitrogen oxides, nonmetallic oxides, chromosulfuric acid, chlorates, hydrides, zinc diethyl, halogens, powdered magnesium, hydrogen peroxide, Nitric acid, sulphuric acid, permanganic acid, sodium hypochlorite

Exothermic reaction with:
acid halides, Acid anhydrides, Reducing agents, acids, Bromine, Chlorine, Chloroform, magnesium, tetrachloromethane, CYANURIC CHLORIDE

Risk of ignition or formation of inflammable gases or vapours with:
Fluorine, Oxides of phosphorus, Raney-nickel

Generates dangerous gases or fumes in contact with:
Alkaline earth metals, Alkali metals

### 10.4 Conditions to avoid

Warming.

### 10.5 Incompatible materials

Various plastics, magnesium, zinc alloys.

### 10.6 Hazardous decomposition products

No data available.

## Section 11: TOXICOLOGY INFORMATION

### 11.1 Information on toxicological effects

**Acute toxicity**

| | | |
|---|---|---|
| LDLO Oral | - 143 mg/kg | (Human) |
| | - Remarks: Lungs, Thorax, or Respiration: Dyspnea. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. | |
| LC50 Inhalation | - 131.25 mg/l | (Rat) |
| | - Remarks: Humans are more susceptible than rodents. Severe visual disturbances in workers reported at 1.5mg/l | |
| LD50 Dermal | - 17,100 mg/kg | (Rabbit) |

(Merck, 2019; Ver 1.8)

**Skin corrosion/irritation**

Skin-rabbit
Remarks: No skin irritation

(ECHA)

**Serious eye damage/eye irritation**

Eyes - rabbit
Remarks: No eye irritation

(ECHA)

**Respiratory or skin sensitization**

Maximisation Test (GPMT) - Guinea pig - OECD Test Guideline 406 - Does not cause skin sensitisation.

(Merck Ver 1.8, 2019)

**Germ cell mutagenicity**

Genotoxicity in vitro
Ames test
S. typhimurium
OECD Test Guideline 471
Result: negative

Genotoxicity in vitro
In vitro assay
Chinese hamster lung cells
OECD Test Guideline 476
Result: negative

Genotoxicity in vivo
Mouse (male and female) – Intraperitoneal
OECD Test Guideline 474
Result: negative

(Merck Ver 1.8, 2019)

**Carcinogenicity**

Inhalation
Mouse
NOAEC 1300 mg/m
No adverse effect observed

(ECHA)

**Reproductive toxicity**

Effect on fertility
Oral – Mouse – NOAEL 1000 mg/kg
Remarks: No adverse effect observed
Inhalation – Rat – NOAEC 1300 mg/m3
Remarks: No adverse effect observed

Effect on developmental
Oral – Mouse – NOAEL 1700 mg/kg
Remarks: Adverse effect observed
Inhalation – Rat – NOAEC 1330 mg/m3
Remarks: Adverse effect observed

(ECHA)

**Specific target organ toxicity – single exposure**

Causes damage to organs.
Target organs: Eyes

**Specific target organ toxicity – repeated exposure**

Causes damage to organs.
Target organs: Eyes

**Aspiration hazard**

This information is not available

## Section 12: ECOLOGY INFORMATION

### 12.1 Toxicity

| | |
|---|---|
| Toxicity to fish | Short term - LC50 - Lepomis macrochirus (Bluegill sunfish) - 15,400mg/l - 96 h |
| Toxicity to daphnia and other aquatic invertebrates | Short term - EC50 - Daphnia magna (Water flea) - > 10,000 mg/l – 48h |
| Toxicity to algae | EC50 – Pseudokirchberiella subcapitata (green algae) – 22,000 mg/l – 96 h |
| Toxicity to bacteria | IC50 – Activated sludge - > 1,000 mg/l; 3h |

(Merck, 2019; Ver 1.8)

### 12.2 Persistence and degradability

(Merck, 2019; Ver 1.8)

| | |
|---|---|
| Biodegradability | Result: 99 % - 3 d - Readily biodegradable |
| Theoretical Oxygen Demand (ThOD) | 1500 mg/g |
| BOD | 5d – 600-1120 mg/g |
| COD | 1420 mg/g |

### 12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water
Log Pow: -0.77
(experimental)
(Lit.) Bioaccumulation is not expected

(Merck, 2019; Ver 1.8)

### 12.4 Mobility in soil

No data available

### 12.5 Other adverse effects

Surface tension
22.6 mN/m at 20 °C
Stability in water
2.2 yr
reaction with hydroxyl radicals (IUCLID)
Discharge into the environment must be avoided.

## Section 13: DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment method

**Product**

Waste material must be disposed according to national and local regulations. Keep the chemicals in its specific waste container according to the waste classification. According to Quality Environment Regulation (Scheduled Waste) 2005, waste need to be sent to designated premise for recycle, treatment or disposal. Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**

Dispose of as unused product.

## Section 14: TRANSPORT INFORMATION

### 14.1 UN number

| | | |
|---|---|---|
| ADR/RID: 1230 | IMDG: 1230 | IATA-DGR: 1230 |

### 14.2 UN proper shipping name

| | |
|---|---|
| ADR/RID: | METHANOL |
| IMDG: | METHANOL |
| IATA-DGR: | METHANOL |

### 14.3 Transport hazard class(es)

| | | |
|---|---|---|
| ADR/RID: 3 (6.1) | IMDG: 3 (6.1) | IATA-DGR: 3 (6.1) |

### 14.4 Packaging group

| | | |
|---|---|---|
| ADR/RID: II | IMDG: II | IATA-DGR: II |

### 14.5 Environmental hazards

| | | |
|---|---|---|
| ADR/RID: no | IMDG Marine pollutant: no | IATA-DGR: no |

### 14.6 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollution category: Y
Ship type : 3

### 14.7 Special precautions for user

No data available

## Section 15: REGULATORY INFORMATION

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

This safety datasheet complies with the requirements of Regulation (EC) No. 453/2010.

## Section 16: OTHER INFORMATION

This information is based on present level of our knowledge, however, this shall not constitute a guarantee product features and shall not establish a legally valid contractual relationship.

**Abbreviations:**

ADR : European agreement concerning the international carriage of dangerous goods by road.

IMDG : International Maritime Dangerous Goods.

IATA : International Air Transport Association

ICAO : International Civil Aviation Organization

RID : Regulations concerning the International Carriage of Dangerous goods by rail.

**Notice to reader**

*The information contained in this Safety Data Sheet is based on the present state of knowledge and current national legislation. It provides guidance on health, safety and environmental aspects of the products and should not be construed as any guarantee of technical performance or suitability for particular application.*

*The information contained in this Safety Data Sheet comes from sources believed to be accurate or otherwise technically correct. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. The users are advised to carry out their own evaluation of the material to determine suitability in their application. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.*