Elite Advanced Materials Sdn Bhd

SAFETY DATA SHEET

According to Regulation (EC) No453/2010

SDS-ETOH(70)-0001
Version 1.1
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www.eamaterials.com

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

1.1 Product identifier

Product name : **Ethanol (Denatured with Methanol), 70%**

Included product code : ETOH(70)011-2.5P, ETOH(70)011-3.8P, ETOH(70)011-25P, ETOH(70)006-2.5P ETOH(70)006-25P.

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 data sheet

Company : Elite Advanced Materials Sdn Bhd
No 1, Jalan KPK1/2, Kawasan Perindustrian
Kundang, 48020 Rawang, Selangor, Malaysia

E-mail address : enquiry@eamaterials.com

1.4 Emergency telephone number

Emergency : +60 3-60343766 (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
Eye irritation	Category 2
Specific target organ toxicity – single exposure	

2.2 Label elements

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

GHS02

GHS07

GHS08

Signal word
Danger

Hazard statement

H225	Highly flammable liquid and vapour
H319	Causes serious eye irritation
H371	May cause damage to organs

Precautionary statements

P210	Keep away from heat/open flames/hot surfaces. — No smoking.
P260	Do not breathe dust/ fume/ mist/ vapours/ spray.
P280	Wear eye protection, face protection, protective clothing, protective gloves.

Response

P308 + P311	IF exposed or concerned: Call a POISON CENTER/doctor.
P337 + P313	If eye irritation persists: Get medical advice/attention.

Storage

P403 + P235	Store in a well-ventilated place. Keep cool.

2.3 Other hazards

No data available.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

Not applicable

3.2 Mixture

Synonyms : Denatured Alcohol, Ethyl Alcohol, Reagent Alcohol
Formula : C_2H_6O
Molecular Weight : 46.07 g/mol

3.3 Mixture

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

Component	Identity	Classification Code	H-Code	Concentration (by volume)
Ethanol (Absolute)	CAS-No.: 64-I 7-5	Flam. Liq. 2 Eye Irrit. 2	H225 H319	70 – 72 %
Methanol	CAS-No.: 67-56-1	Flam. Liq. 2 Acute Tox. 3 STOT SE 3	H225 H301 H311 H331 H371	3.5 – 3.6 %
Water	CAS-No.: 7732-18-5	Not classified		24.4 – 26.5 %

(Merck, 2019; Ver 7.0)

Section 4: FIRST AID MEASURES

4.1 Description of First Aid measures

General information

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

If inhaled

Move person into fresh air and keep at rest in a position comfortable for breathing. 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.

In case of skin contact

Take off immediately all contaminated clothing. Wash off with soap and plenty of water for at least 15 minutes. Take victim to a doctor if irritation persists.

In case of eye contact

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

If swallowed

Do NOT induce vomiting. Have victim drink water or milk to dilute if victim is conscious. 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, respiratory paralysis, Dizziness, narcosis, inebriation, euphoria, Nausea, Vomiting.

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

Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide (CO2) to extinguish flames.

Unsuitable extinguishing media

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

5.2 Special hazards arising from the substance or mixture

Carbon oxides.

5.3 Advice for fire-fighters

Full protective clothing and self-contained breathing apparatus are required during handling.

5.4 Further information

Use water spray to cool unopened containers.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal protective equipment is required during handling. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges. Respirators should be selected accordance to OSHA (29 CFR 1910 134).

6.2 Environmental precautions

Do not discharge into drains or water ways. Prevent further leakage or spillage if safe to do so.

6.3 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. (see section 13).

6.4 Reference to other sections

Information on waste treatment, see Section 13.

Section 7: HANDLING AND STORAGE

7.1 Precaution for safe handling

Personal protective equipment is required during handling to avoid contact with skin and eyes. Please handle the chemical under the fume hood to avoid inhalation of vapour or mist. Keep container tightly closed and away from sources of heat, sparks and naked flames. Take precautionary measures against static discharges.

7.2 Conditions for safe storage, including any incompatibilities

Container must store in a cool dry, well-ventilated place and away from all sources of ignition, heat and direct sunlight. Avoid accumulation of electrostatic charges.

7.3 Specific end use

No further relevant information available.

Section 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Component	ACGIH TLV (8 hr)	OSHA PEL (8 hr)	NIOSH REL (10 hr)
Ethanol (Absolute)	STEL: 1000 ppm	TWA: 1000 ppm	TWA: 1000 ppm
Methanol	TWA: 200 ppm STEL: 250 ppm	TWA: 200 ppm STEL: 250 mg/m^3	TWA: 200 ppm STEL: 250 ppm

(OSHA)

8.2 Exposure control

Personal protection measures, such as personal protective equipment

Do not eat, drink or smoke during chemical handling. Remove and wash contaminated clothing before re-using. Ventilation must work properly, especially in confined areas. Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled.

Eye/ face protection

Chemical goggles or safety glasses is required during handling. A face shield may also be necessary. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Wear appropriate protective gloves and clothing to prevent skin exposure. 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. Dispose 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: 0.3mm
Break through time: 480min
Material tested:Butoject® (KCL 897 / Aldrich Z677647, Size M)

Splash contact*
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 31 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

(Sigma Aldrich, 2015)

Body protection

Complete suit protecting against chemicals, 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
Ordor	:	No data available
Ordor threshold	:	No data available
pH-value	:	No data available
Melting point/Range	:	No data available
Boiling point/Range	:	No data available
Flash point	:	No data available
Evaporation rate	:	No data available
Explosion limit-LEL	:	No data available

Explosion limit-UEL	:	No data available
Vapour pressure	:	No data available
Vapor density (air=1)	:	No data available
Density	:	No data available
Water solubility	:	Soluble in water
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available
Surface tension	:	No data available

(VAL TECH, 2020)

9.2 Other information

Not applicable.

Section 10 : STABILITY AND REACTIVITY

10.1 Reactivity

Stable.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

No data available.

10.4 Conditions to avoid

Incompatible materials, ignition sources, excess heat, oxidizers, flames, and sparks.

10.5 Incompatible materials

Strong oxidizing agents; strong inorganic acids.

10.6 Hazardous decomposition products

Other decomposition products – No data available
In the event of fire: see section 5.

Section 11 : TOXICOLOGY INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Toxicity	Oral	Inhalation	Dermal
Absolute ethanol (Merck, 2020: Ver I.11)	LD50 – 10470 mg/kg (Rat)	LC50 – 124.7 mg/l (Rat, 4h)	LCS0 – No data available
Methanol (Merck, 2018; Ver 3.3)	LD50 – 143 mg/kg (Human)	LC50– 131.25mg/l (Rat, 4h)	LC50 – 17100 mg/kg

Skin corrosion/irritation

Ethanol (Absolute)
Skin – rabbit
Remarks: No skin irritation

(Merck, 2020; Ver 1.11)

Serious eye damage/eye irritation

Ethanol (Absolute)
Eyes – rabbit
Remarks: No eye irritation
(Merck, 2020; Ver 1.11)

Respiratory or skin sensitisation

Ethanol (Absolute)
Local lymph node assay (LLNA) Mouse

Result: Negative
Method: OECD Test Guideline 429.
(Merck, 2020; Ver 1.11)

Germ cell mutagenicity

Genotoxicity in vitro
Amest test
S. typhimurium
Result: Negative

In vitro mammalian cell gene mutation test
Mouse lymphoma test
Result: Negative
Method: OECD Test Guideline 476.
(Merck, 2020; Ver 1.11)

Carcinogenicity

IARC: Carcinogenicity of the mixture has not been determined. Consumption of alcoholic beverages is considered carcinogenic to humans (Group 1) by IARC, though ethanol itself has not been classified by this agency. No other components are listed as carcinogens by IARC, US OSHA or NTP.

Reproductive toxicity

No data available.

Specific target organ toxicity – single exposure

No data available.

Specific target organ toxicity – repeated exposure

No data available.

Aspiration hazard

Not available.

Additional Information

RTECS: Not available.

Section 12 : ECOLOGY INFORMATION

12.1 Ecotoxicity

Absolute Ethanol

Toxicity to fish	Flow-through test - EC50 – Pimephales promelas (feathed minnow) – 15300 mg/L - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 – Daphnia magna (Water flea) - 9268 – 14221 mg/l – 48h
Toxicity to algae	IC5 – Scenedesmus quadricauda (Green algae) - 5000 mg/L – 7d
Toxicity to bacteria	EC5 – Pseudomonas putida – 6500 mg/L – 16h
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	Semi-static test NOEC – Dophnia magna (Water flea) – 9.6mg/l – 9d

(Merck, 2020: Ver 1.11)

Methanol

Toxicity to fish	Flow-through test LC50 – Lepomis macrochirus (Bluegill sunfish) – 15400 mg/l – 96 h
Toxicity to daphnia and other aquatic invertebrates	Static test EC50 - Daphnia magna (Water flea) – > 10000 mg/l – 48 h
Toxicity to algae	Static test EC50 – Psudokirchneriella subcapitata (Green algae) – ca. 22000 mg/l – 96 h
Toxicity to bacteria	Static test IC50 – Activated sludge – > 1000 mg/l – 3 h
Toxicity to fish (Chronic toxicity)	NOEC – Oryzias latipes (Orange-red killifish) – 7900 mg/l – 200 h

(Merck, 2019; Ver 1.8)

12.2 Ecotoxicity

Absolute Ethanol

Biodegradability	94 % - OECD Test Guideline 301E – Readily biodegradable
Biochemical Oxygen Demand (BOD)	930-1670 mg/g – 5 d

Theoretical Oxygen Demand (ThOD)	2100 mg/g
Ration COD/ThBOD	90 %

(Merck, 2020; Ver 1.11)

Methanol

Biodegradability	99 %; 30 d - OECD Test Guideline 301D – Readily biodegradable
Biochemical Oxygen Demand (BOD)	600-1120 mg/g – 5 d
Chemical Oxygen Demand (COD)	1420 mg/g
Theoretical Oxygen Demand (ThOD)	1500 mg/g
Ratio BOD/ThBOD	BOD5 – 76% - Closed Bottle test

(Merck, 2019; Ver 1.8)

12.3 Bioaccumulative potential

Absolute ethanol
Partition coefficient: n-octanol/water
Log Pow: -0.31 (experimental)

(Merck, 2020; Ver 1.11)

Methanol
Partition coefficient: n-octanol/water
Log Pow: -0.77 (experimental)

(Merck, 2019; Ver 1.8)

12.4 Mobility in soil

No data available.

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 and do not re-use empty containers.

Section 14 : TRANSPORT INFORMATION

14.1 UN number

ADR/RID: 1170	IMDG: 1170	IATA-DGR: 1170

14.2 UN proper shipping name

ADR/RID:	ETHANOL (ETHYL ALCOHOL)
IMDG:	ETHANOL (ETHYL ALCOHOL)
IATA-DGR:	ETHANOL (ETHYL ALCOHOL)

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: no	IATA-DGR: no

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

No data available.

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.