Elite Advanced Materials Sdn Bhd

SAFETY DATA SHEET

According to Regulation (EC) No 453/2010

Version 1.2
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www.eamaterials.com

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

1.1 Product identifier

Product name : **Absolute Ethanol**

Included product code : AETOH010-2.5, AETOH010-4.0, AETOH012-2.5, AETOH012-4.0, AETOH011-2.5P, AETOH011-25P

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
Lot 34, Jalan RP2, Rawang Perdana Industrial Estate, 48000 Rawang, Selangor, Malaysia

E-mail address : enquiry@eamaterials.com

1.4 Emergency telephone number

Emergency phone : +60 3-6091 4200 (Local business hours only)

SECTION 2: HAZARDS IDENTIFICATION

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

2.2 Label elements

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

Hazard pictograms

GHS02

GHS07

Signal word

Danger

Hazard statements

H225	Highly flammable liquid and vapour
H319	Causes serious eye irritation

Precautionary statements

P210	Keep away from heat, hot surfaces, open flames, sparks. - No smoking
P280	Wear eye protection, face protection, protective clothing, protective gloves

Response

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/ attention.

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: Absolute Alcohol

Formula: C_2H_6O

Molecular Weight: 46.07 g/mol

Component	Identity	Classification Code	H-Code	Concentration (by wt)
Ethanol	CAS-No. : 64-17-5 EC No. : 200-578-6 Index No. : 603-002-00-5	Flam. Liq. 2 Eye Irrit. 2A	H225 H319	<=100 %

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. Give nothing to drink. 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 (CO_2) 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

Combustible

Vapours are heavier than air and may spread along floors

Forms explosive mixtures with air at ambient temperatures

Pay attention to flashback

Development of hazardous combustion gases or vapours possible in the event of fire

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

6.2 Environmental precautions

Do not discharge into drains or waterways. 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	OSHA PEL	NIOSH IDLH
Ethanol	STEL: 1,000 ppm	(Vacated) TWA: 1,000 ppm (Vacated) TWA: 1,900 mg/m^3 TWA: 1,000 ppm TWA: 1,900 mg/m^3	IDLH: 3,300 ppm TWA: 1,000 ppm TWA: 1,900 mg/m^3

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 working 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: 0.3 mm
Break through time: 480 min
Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M)

Splash contact*
Material: Nitrile rubber
Minimum layer thickness: 0.2 mm
Break through time: 38 min
Material tested: Dermatril® (KCL 743 / Aldrich Z677388, Size M)

*Source – 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	:	aromatic

Ordor threshold	:	No data available
pH - value	:	No data available
Melting point / Range	:	-114.0 ˚C
Boiling point / Range	:	78 °C
Flash point	:	14 °C [closed cup]
Evaporation rate	:	No data available
Flammability limit - LEL	:	3.3 % (V)
Flammability limit - UEL	:	19 % (V)
Vapour pressure	:	44.6 mm Hg at 20.0 °C
Vapor density (air = 1)	:	1.59
Density	:	No data available
Bulk density	:	No data available
Solubility(ies)	:	0.7890 g/mL at 25°C
Water solubility	:	completely miscible
Partition coefficient: n-octanol/water:		log Pow: -0.31
Auto-ignition temperature	:	363 °C / 685.4 °F
Decomposition temperature	:	No data available
Viscosity	:	1.2cP at 25°C
Explosive properties	:	No data available
Oxidising properties	:	No data available
Surface Tension	:	No data available

9.2 Other information

Not applicable

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Vapours may form explosive mixture with air

10.2 Chemical stability

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

10.3 Possibility of hazardous reactions

Risk of explosion/exothermic reaction with:

Hydrogen peroxide, perchlorates, perchloric acid, nitric acid, mercury (II) nitrate, permanganic acid, nitriles, peroxi compounds, strong oxidising agents, nitrosyl compounds, peroxides, sodium, potassium, halogen oxides, calcium hypochlorite, nitrogen dioxide, metallic oxides, uranium hexafluoride, iodides, chlorine, alkali metals, alkaline earth metals, alkali oxides, ethylene oxide

Silver with nitric acid

Silver compounds with ammonia

Potassium permanganate with conc. Sulfuric acid

Risk of ignition or formation of inflammable gases or vapours with:

Halogen-halogen compounds, chromium (VI) oxide, chromyl chloride, fluorine, hydrides, oxides of phosphorus, platinum

Nitric acid with potassium permanganate

10.4 Conditions to avoid

Incompatible materials, ignition sources, excess heat, oxidizers

10.5 Incompatible materials

Rubber, various plastics

10.6 Hazardous decomposition products

No data available

SECTION 11: TOXICOLOGY INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethanol	LD50 = 7,060 mg/kg (Rat)	Not listed	20,000 ppm/10h (Rat)

Skin corrosion/irritation

Skin - rabbit

Remarks: No skin irritation - 24 h

Serious eye damage/eye irritation
Eyes - rabbit
Remarks: Irritant. Contact may result in irritation, lacrimation, pain and redness

Respiratory or skin sensitisation
No respiratory or skin sensitisation toxicity classification

Germ cell mutagenicity

No data available

Carcinogenicity
Carcinogenicity - Mouse - Oral Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Liver:Tumors. Blood:Lymphomas including Hodgkin's disease.

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
Reproductive toxicity - Human - female - Oral
Effects on Newborn: Apgar score (human only)
Effects on Newborn: Other neonatal measures or effects
Effects on Newborn: Drug dependence

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No aspiration toxicity classification

Signs and Symptoms of Exposure
For information on potential signs and symptoms of exposure, See Section 2 - Hazards Identification and/or Section 11 - Toxicological Information.

SECTION 12: ECOLOGY INFORMATION

12.1 Ecotoxicity

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Ethanol	EC50 = 275 mg/L/72h (Chlorella vulgaris)	LC50 = 14,200 mg/L/96h Fathead minnow	EC50 = 34,634 mg/L/30min Photobacterium	EC50 = 9,268 mg/L/48h EC50 = 10,800 mg/L/24h

	(Pimephales promelas)	phosphoreum EC50 = 35,470 mg/L/5min Photobacterium phosphoreum

12.2 Persistence and degradability

Readily biodegradable

12.3 Bioaccumulative potential

Accumulation in organisms is not expected

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

The substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher

12.5 Other adverse effects

No data available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment method

For small amounts absorb with sand, vermiculite or similar and dispose of to an approved landfill site. Contact the manufacturer for additional information if larger amounts are involved. Prevent contamination of drains and waterways as aquatic life may be threatened and environmental damage may result.

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 IMDG: 3 IATA-DGR: 3

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

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

Storage class 3

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

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.

Relevant phrases:

H225 Highly flammable liquid and vapor

H319 Causes serious eye irritation

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.

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