Elite Advanced Materials Sdn Bhd

SAFETY DATA SHEET

According to Regulation (EC) No 453/2010

SDS-ACN-0001
Version 1.3
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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	:	**Acetonitrile**
Included product code	:	ACN010-2.5, ACN010-4.0, ACN012-2.5, ACN012-4.0, ACN008-2.5P

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 KPK 1/2, Kawasan Perindustrian Kundang, 48020 Rawang, Selangor, Malaysia
E-mail address	:	enquiry@eamaterials.com

1.4 Emergency telephone number

Emergency phone	:	+60 3-6034 3766 (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
Acute toxicity, Oral	Category 4
Acute toxicity, Inhalation	Category 4
Acute toxicity, Dermal	Category 4
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
H302+ H312 + H332	Harmful if swallowed, in contact with skin or if inhaled
H319	Causes serious eye irritation

Precautionary statements

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing vapours.
P264	Wash hand 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/eye protection/face protection.

Response

P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contract lenses, if present and easy to do. Continue rinsing.
P330	Rinse mouth.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P363	Wash contaminated clothing before reuse.
P370 + P378	In case of fire: Use carbon dioxide, dry chemical or foam for extinction.

Storage

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

2.3 Other hazards

Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

Synonyms: Methyl cyanide, Cyanomethane, Ethanenitrile
Formula: C_2H_3N
Molecular Weight: 41.05 g/mol
CAS-No.: 75-05-8

Component	Identity	Classification Code	H-Code	Concentration (by wt)
Acetonitrile	CAS-No.: 75-05-8 EC-No. : 200-835-2 Index-No. : 608-001-00-3	Flam. Liq. 2 Acute Tox. 4 (Oral) Acute Tox. 4 (Dermal) Acute Tox. 4 (Inhalation) Eye Irri. 2	H225 H302 H312 H332 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. Consult a physician. If signs of poisoning appear, treat as for inhalation. Wash contaminated clothing before reuse. Contaminated combustible material, e.g. clothing ignites more readily and burns fiercely.

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
The most important known symptoms and effects are described in section 2.2 and section 11.

4.3 Indication of any immediate medical attention and special treatment
Treat as cyanide poisoning. Always have a cyanide first-aid kit and proper instruction on hand. The oneself symptoms is generally delayed pending conversation to Cyanide, Nausea, Vomit, Headache, Dizziness, Rash, Cyanosis, Excitement, Depression, Drowsiness, Impaired Judgment, Lack of Coordination, Stupor and Death.

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
Vapors may form explosive mixture with air. Flash back possible over considerable distance.

5.3 Advice for fire-fighters
Wear full protective clothing and self-contained breathing apparatus.

5.4 Further information
Standard procedure for chemical fires. Take measures to prevent electrostatic charging. Prevent firefighting water from entering surface water or groundwater

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. Take precautionary measures against static discharges.

6.2 Environmental precautions
Contain or absorb leaking liquid with sand or earth, consults an expert. Prevent liquid entering sewers, basements and workpits. If substance has entered a water course or sewer or contaminated soil or vegetation, advise police.

6.3 Methods and material for containment and cleaning up

Spillage: May react with combustible substances creating fire or explosion hazard and formation of toxic fumes. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Soak up with inert absorbent material (e.g. sand, silica gel). Prevent liquid entering sewers, basements and workpits; vapor may create explosive atmosphere. Transfer to covered steel drums. Dispose of promptly.

6.4 Reference to other sections

Information on waste treatment, see Section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precaution for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Wear personal protective equipment. Use only under a chemical fume hood. Keep container tightly closed and away from sources of heat and static electricity discharge. Take precautionary measures against static discharges.

7.2 Conditions for safe storage, including any incompatibilities

Keep tightly closed at room temperature in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Keep out of direct sunlight and away from incompatible materials. Store in original container. Electrical equipment should be protected to the appropriate standard.

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
Acetonitrile	TWA: 20 ppm Skin	(Vacated) TWA: 40 ppm (Vacated) TWA: 70 mg/m^3 (Vacated) TWA: 5 mg/m^3 (Vacated) STEL: 60 ppm (Vacated) STEAL: 105 mg/m^3 TWA: 40 ppm TWA: 70 mg/m^3	IDLH: 500ppm IDLH: 25 mg/m^3 TWA: 20ppm TWA: 34 mg/m^3

8.2 Exposure control

Personal protection measures, such as personal protective equipment

Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, 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. 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 chemical resistant overall. 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: butyl-rubber
Minimum layer thickness: 0.3 mm
Break through time: 480 min
Material tested: Butoject® (KCL 897 / Aldrich Z677647, 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	:	Ether-like
Ordor threshold	:	No data available
pH - value	:	No data available
Melting point / Range	:	-43.8°C

Boiling point / Range	:	81.6°C
Flash point	:	6.0 °C (closed cup)
Evaporation rate	:	No data available
Flammability limit - LEL	:	4.4 %
Flammability limit - UEL	:	16 %
Vapour pressure	:	98.64 hPa at 20°C
Vapor density (air = 1)	:	1.42
Density	:	0.7822 g/ml at 20°C
Bulk density	:	No data available
Solubility(ies)	:	No data available
Water solubility	:	completely miscible
Partition coefficient: n-octanol/water	:	log Pow: -0.54 at 25°C
Auto-ignition temperature	:	523 °C
Decomposition temperature	:	No data available
Viscosity	:	0.38 mPa.s at 15°C
Explosive properties	:	Not Explosive
Oxidising properties	:	The substance or mixture is not classified as oxidizing
Surface Tension	:	No data available

9.2 Other information
Not applicable

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity
Heat-sensitive/decomposition. Explosible with air in a vapors/gaseous state.

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Risk of explosion in contact with sulfuric acid/heat, cyanopropyl nitrate, perchloric acid, metal perchlorates, nitrogen-fluorine-compounds. The substance can react dangerously with oxidizing agents, acids, perfluoro urea, nitrogen dioxide/catalyst.

10.4 Conditions to avoid
Accumulation of electrostatic charges, heating, heat, flames and hot surfaces

10.5 Incompatible materials
Acid, Bases, Oxidizing agents, Reducing agents. Unsuitable working materials: various plastics, rubber

10.6 Hazardous decomposition products
Nitrogen oxides (NOX), carbon oxides, Hydrogen cyanide, Hydrocyanic acid (Hazardous decomposition products from under fire condition).

SECTION 11: TOXICOLOGY INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Acetonitrile	**ATE = 617 mg/kg** 450 – 787 mg/kg (Rat) 2,460 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	**ATE = 3587 ppm** 7551 ppm (Rat) 8h

Skin corrosion/irritation
Skin - Rabbit - No skin irritation - OECD Test Guideline 404

Serious eye damage/eye irritation
Eyes - Rabbit - Irritating to eyes. - OECD Test Guideline 405

Respiratory or skin sensitisation
Buehler Test - Guinea pig - OECD Test Guideline 406 - Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity
Genotoxicity in vitro - Hamster - ovary - negative
Mutation in mammalian somatic cells.
Genotoxicity in vitro - Ames test - S. typhimurium - with and without metabolic activation - Not mutagenic in Ames Test
Genotoxicity in vitro - Hamster - ovary - Equivocal evidence.
Sister chromatid exchange
Genotoxicity in vivo - Mouse - Inhalation - Positive results were obtained in some in vivo tests

Carcinogenicity
No evidence of carcinogenicity in animal studies.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity
Damage to fetus not classifiable
Fertility classification not possible from current data.

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No aspiration toxicity classification

Potential health effects

Inhalation	Harmful if inhaled. May cause respiratory tract irritation.
Ingestion	Harmful if swallowed.
Skin	Harmful if absorbed through skin. May cause skin irritation.
Eyes	Causes serious eye irritation.

Signs and Symptoms of Exposure
Treat as cyanide poisoning. Always have on hand a cyanide first-aid kit, together with proper instructions. The onset of symptoms is generally delayed pending conversion to cyanide. Nausea, Vomiting, Diarrhoea, Headache, Dizziness, Rash, Cyanosis, excitement, depression, Drowsiness, impaired judgment, Lack of coordination, stupor, death

Additional Information
RTECS: AL7700000

SECTION 12: ECOLOGY INFORMATION

12.1 Ecotoxicity

Toxicity to fish	LC50 P.promelas: 1640 mg/l /96h
Toxicity to daphnia and other aquatic invertebrates	EC50 Daphnia magna: 3600 mg/L/48h

12.2 Persistence and degradability

Biodegradability	84%, Readily biodegradable, according to appropriate OECD test.

12.3 Bioaccumulative potential

Bioaccumulation	log Pow: -0.54 No bioaccumulation is to be expected (log P o/w <1)

12.4 Mobility in soil
Not expected to adsorb on soil

12.5 Other adverse effects
Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment method

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. 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: 1648 IMDG: 1648 IATA-DGR: 1648

14.2 UN proper shipping name
ADR/RID: ACETONITRILE
IMDG: ACETONITRILE
IATA-DGR: ACETONITRILE

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
No data available

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
H336 May cause drowsiness or dizziness
R11 Highly flammable
R36 Irritating to eyes
R67 Vapours may cause drowsiness and dizziness

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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