

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 : **Acetonitrile**
Included product code : ACN010-2.5, ACN010-4.0

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 |
| 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 contact 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 P405 | Store in a well-ventilated place. Keep container tightly closed. Store locked up. |
|---------------------|--|

2.3 Other hazards

Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

Synonyms : Methyl cyanide, Cyanomethane, Ethanenitrile

Formula : C₂H₃N

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 | Flam. Liq. 2 | H225 | <=100 % |
| | EC-No. : 200-835-2 | Acute Tox. 4 (Oral) | H302 | |
| | Index-No. : 608-001-00-3 | Acute Tox. 4 (Dermal) | H312 | |

| | | | | |
|--|--|---------------------------|------|--|
| | | Acute Tox. 4 (Inhalation) | H332 | |
| | | Eye Irr. 2 | H319 | |

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 (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

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