

# SAFETY DATA SHEET

According to Regulation (EC) No453/2010

SDS -ACN-0001

Version 1.4

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www.eamaterials.com

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

### 1.1 Product identifier

Product name : **Acetonitrile**  
Included product code : ACN010-2.5, ACN010-4.0, ACN012-2.5, ACN012-4.0,

### 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 datasheet

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 : +603-60343766 (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

(ECHA)

### 2.2 Label elements

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

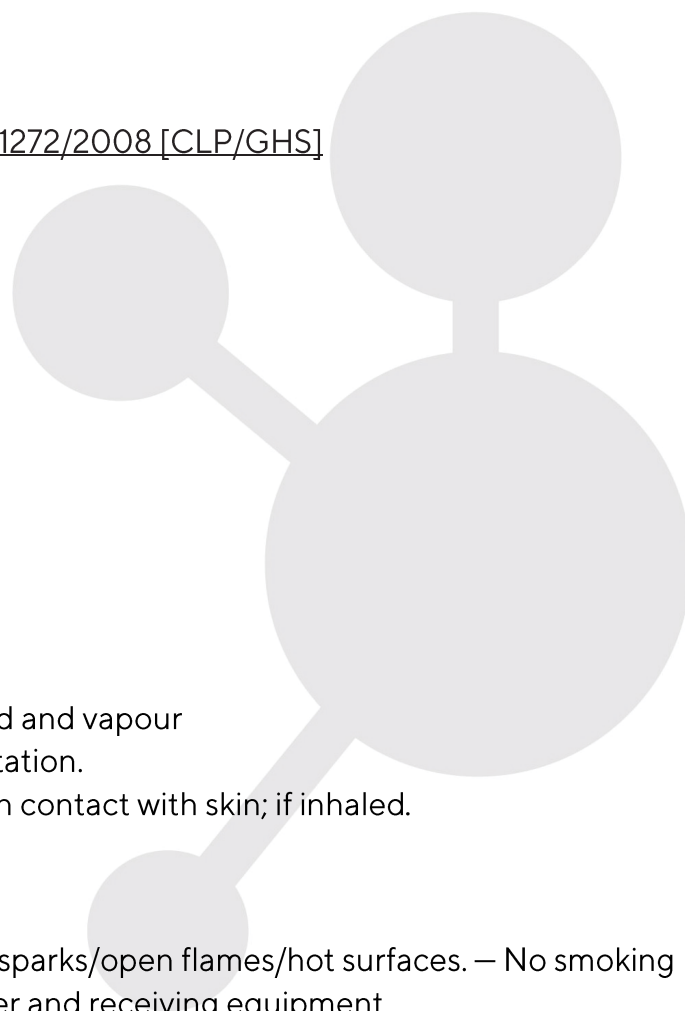
Hazard pictograms



**GHS02**



**GHS07**



Signal word

Danger

Hazard statement

H225	Highly flammable liquid and vapour
H319	Causes serious eye irritation.
H3302 + H312 + H332	Harmful if swallowed; in contact with skin; if inhaled.

Precautionary statements

P210	Keep away from heat/ sparks/open flames/hot surfaces. – No smoking
P240	Ground/bond container and receiving equipment.

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.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.

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 cyanide, Cyanomethane, Ethanenitrile  
 Formula : C<sub>2</sub>H<sub>3</sub>N  
 Molecular Weight : 41.05 g/mol  
 CAS-No. : 75-05-8

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

Component	Identity	Classification Code	H-Code	Concentration (by wt)
Acetonitrile	CAS-No.: 75-05-8 EC No.: 200-835-2	Flam. Liq. 2	H225	<=100 %
		Eye Irrit. 2	H319	
		Acute Tox. 4 (Oral)	H302	
		Acute Tox. 4 (Dermal)	H312	
		Acute Tox. 4 (Inhalation)	H332	

**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

Fresh air. If breathing stops: mouth-to-mouth breathing or artificial respiration. Oxygen if necessary. Immediately call in physician.

#### In case of skin contact

Take off immediately all contaminated clothing. Rinse skin with water/shower. Consult a physician

#### In case of eye contact

Rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

#### If swallowed

Immediately make victim drink water (two glasses at most). Consult a physician.

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

May cause headache and dizziness.

The following applies to cyanogen compounds/ nitriles in general: utmost caution!

Release of hydrocyanic acid is possible – blockade of cellular respiration.

Cardiovascular disorders, dyspnoea, unconsciousness.

Irritant effects, Nausea, Vomiting, Convulsions, Shortness of breath, respiratory arrest, cardiac arrest, unconsciousness.

### **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

Water, Foam, Carbon dioxide (CO<sub>2</sub>), 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.

Forms explosive mixtures with air at ambient temperatures.

Vapours are heavier than air and may spread along floors.

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

Fire may cause evolution of:

Nitrogen oxides, hydrogen cyanide (hydrocyanic acid).

### **5.3 Advice for fire-fighters**

Special protective equipment for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

### **5.4 Further information**

Remove container from danger zone and cool with water. Suppress (knock down) gases/vapours/mists with a water spray jet. 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**

For disposal 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

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

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

Storage conditions

Keep tightly closed at room temperature in a dry, cool 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)
Acetonitrile	TWA: 20 ppm	TWA: 40 ppm STEL: 60 ppm	TWA: 20 ppm

(OSHA)

**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**

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**

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: 0.7 mm

Break through time: 480 min

Material tested: Butoject® (KCL 898)



Splash contact\*

Material: polychloroprene

Minimum layer thickness: 0.65 mm

Break through time: 100 min

Material tested: Camapren® (KCL 720)

\*Source – Merck Ver 1.7; 2020

### 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

Required when vapours/aerosols are generated.

Recommended Filter type: Filter A (acc. To DIN 3181) for vapours of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented

### Environmental exposure controls

Do not let product enter drains.

Risk of explosion.

## Section 9 : PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Physical state	:	Liquid
Color	:	colourless
Ordor	:	Ether-like
Ordor threshold	:	39.8 ppm
pH - value	:	No data available
Melting point / Range	:	-45.7°C
Boiling point / Range	:	81.6°C at 1,013 hPa





Flash point	:	2.0 °C (closed cup)
Evaporation rate	:	No data available
Flammability limit - LEL	:	3.0 % (V)
Flammability limit - UEL	:	17 % (V)
Vapour pressure	:	97 hPa at 20°C
Vapor density (air = 1)	:	1.42
Density	:	0.786 g/cm <sup>3</sup> at 20°C
Bulk density	:	No data available
Solubility(ies)	:	No data available
Water solubility	:	Soluble at 20 °C
Partition coefficient: n-octanol/water	:	log Pow: -0.34 (IUCLID) Bioaccumulation is not expected
Auto-ignition temperature	:	No data available
Decomposition temperature	:	Distillable in an undecomposed state at normal pressure.
Viscosity	:	0.316 mPa.s at 25°C
Explosive properties	:	Not classified as explosive
Oxidising properties	:	none
9.2 Other information		
Ignition temperature	:	524 °C

(Merck, 2020; Ver 1.7)

## Section 10 : STABILITY AND REACTIVITY

### 10.1 Reactivity

Vapours may form explosive mixture with air

### 10.2 Chemical stability

Heat sensitive

Distillable in an undecomposed state at normal pressure.



### 10.3 Possibility of hazardous reactions

Violent reactions possible with:

Strong bases, strong reducing agents

Risk of explosion with:

Nitrates, perchlorates, perchloric acid, conc. Sulfuric acid, with, Heat

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

Oxidizing agents, nitric acid, nitrogen dioxide, with, Catalyst

Generates dangerous gases or fumes in contact with:

Acids

### 10.4 Conditions to avoid

Warming.

### 10.5 Incompatible materials

Rubber, various plastics.

### 10.6 Hazardous decomposition products

In the event of fire: See section 5.

## Section 11 : TOXICOLOGY INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

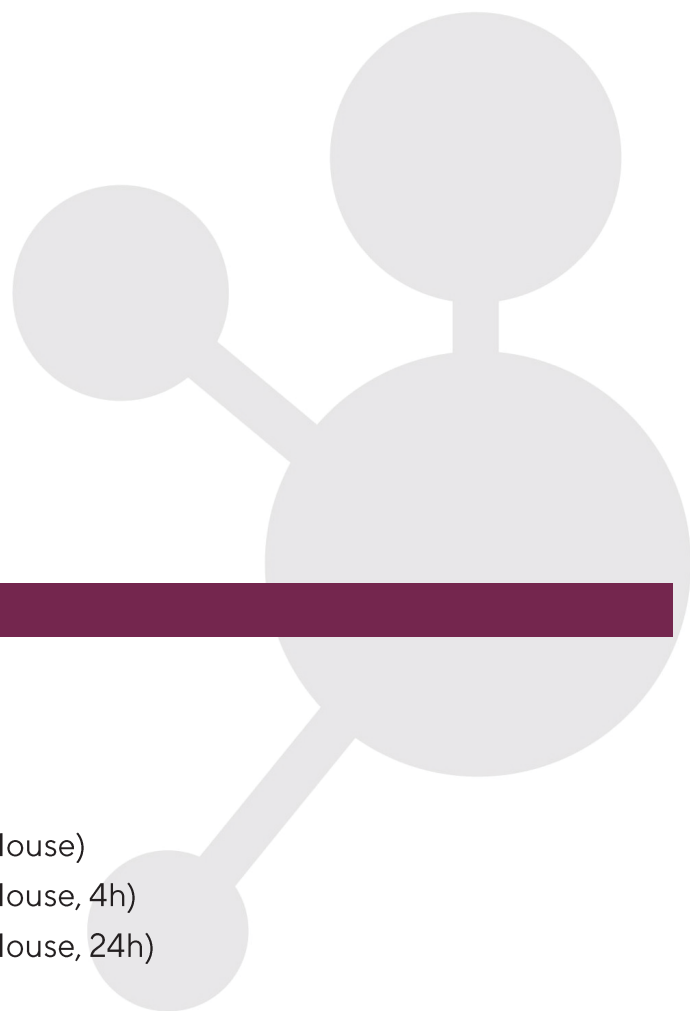
LD50 Oral	- 617mg/kg bw	(Mouse)
LD50 Dermal	- 6022 mg/m <sup>3</sup>	(Mouse, 4h)
LC50 Inhalation	- 2000 mg/kg bw	(Mouse, 24h)

(ECHA)

#### Skin corrosion/irritation

Skin- Rabbit

Remarks : Not irritating to skin.





(ECHA)

### **Serious eye damage/eye irritation**

Eyes- Rabbit

Remarks : Irritating

(ECHA)

### **Respiratory or skin sensitisation**

Guinea pig

Result: Non-sensitizing

(ECHA)

### **Germ cell mutagenicity**

Genotoxicity in vivo

Mouse

Result: Negative

Method: OECD Test Guideline 474

Genotoxicity in vitro

Amest test

Salmonella typhimurium

Result: Negative

(MERCK Ver 1.7; 2020).

### **Carcinogenicity**

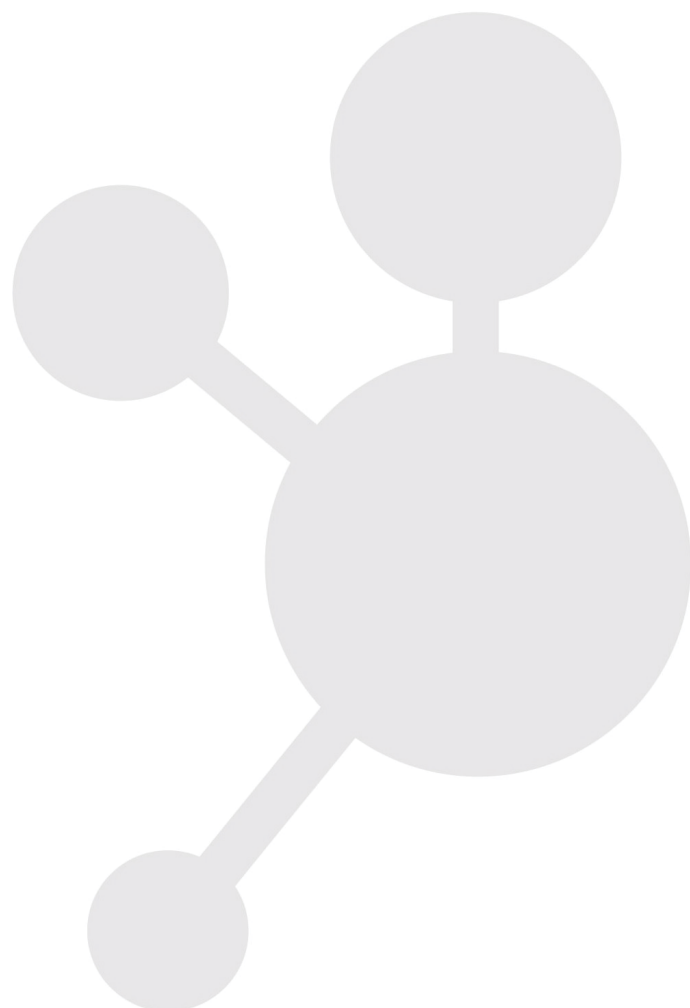
No data available

### **Reproductive toxicity**

Effect on fertility

Oral: No data available

Inhalation: NOEC – 1008 mg/m<sup>3</sup> – Adverse effect observed





Dermal: No data available

Effect on developmental toxicity

No data available

(ECHA).

### **Specific target organ toxicity – single exposure**

No data available.

### **Specific target organ toxicity – repeated exposure**

No data available.

### **Aspiration hazard**

No aspiration toxicity classification.

### **Additional Information**

After absorption:

Systemic effects:

Shortness of breath, Headache, Dizziness, Nausea, Convulsions, respiratory arrest, cardiac arrest, Unconsciousness

Symptoms may be delayed.

The following applies to cyanogen compounds/ nitriles in general: utmost caution!

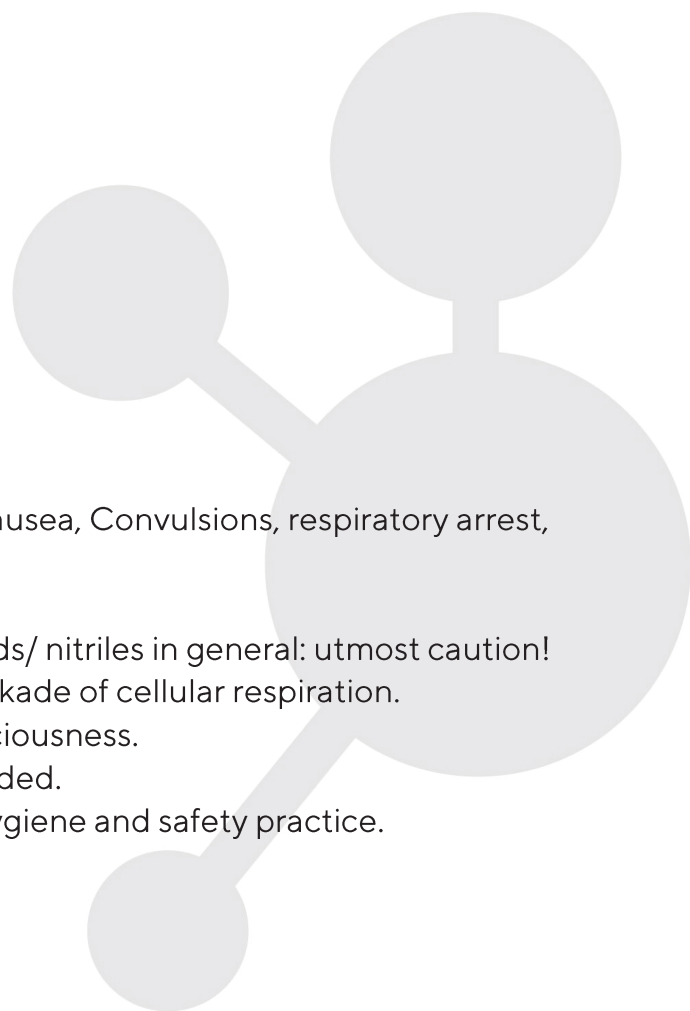
Release of hydrocyanic acid is possible - blockade of cellular respiration.

Cardiovascular disorders, dyspnoea, unconsciousness.

Other dangerous properties cannot be excluded.

Handle in accordance with good industrial hygiene and safety practice.

(Merck, 2020; Ver 1.7)



## Section 12 : ECOLOGY INFORMATION

### 12.1 Ecotoxicity

Toxicity to fish	LC50 - <i>Oryzias Latipes</i> - 100 mg/L - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - <i>Daphnia magna</i> (Water flea) - > 1,000 mg/L - 48 h NOEC - <i>Daphnia magna</i> (Water flea) - 960 mg/L - 21 d
Toxicity to algae	EC50 - <i>Pseudokirchneriella subcapitata</i> (green algae) - > 1,000 mg/l - 72 h NOEC - <i>Pseudokirchneriella subcapitata</i> (green algae) - > 1,000 mg/l - 72 h IC5 - <i>Scenedesmus quadricauda</i> (Green algae) - 7,300 mg/l - 8d
Toxicity to bacteria	EC5 - <i>Pseudomonas putida</i> - 680 mg/l - 16 h
Toxicity to microorganisms	IC50 - Aerobic microorganisms - 7500 mg/l - 15 h

(Merck, 2020; Ver 1.7)

### 12.2 Persistence and degradability

Biodegradability	70% - 21d, Readily biodegradable, according to appropriate OECD test Guideline 310
Biochemical Oxygen Demand (BOD)	No data available
Chemical Oxygen Demand (COD)	No data available

(Merck, 2020; Ver 1.7)

### 12.3 Bioaccumulative potential

Partition coefficient: n-Octanol/water

Log Pow: -0.34

(Merck, 2020; Ver 1.7)



## 12.4 Mobility in soil

Log Koc: 1.21

(Merck, 2020; Ver 1.7)

## 12.5 Other adverse effects

Stability in water

DT50

9,999 D

At pH: 7

(calculated) Hydrolyses slowly

(Merck, 2020; Ver 1.7)

## 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: 1648	IMDG: 1648	IATA-DGR: 1648
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### 14.2 UN proper shipping name

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

### 14.3 Transport hazard class(es)

ADR/RID: 3	IMDG: 3	IATA-DGR: 3
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### 14.4 Packaging group

ADR/RID: II	IMDG: II	IATA-DGR: II
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### 14.5 Environmental hazards

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

All national and local regulations, including Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013, if applicable to the use, should be observed.

National legislation

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.

### **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.*