



Acrylonitrile

Version 2.4

Revision Date 02.09.2005

Ref. 130000012135

This SDS adheres to the standards and regulatory requirements of Great Britain and may not meet the regulatory requirements in other countries.

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product information

Product name : Acrylonitrile

Synonyms : Acrylonitrile stabilized, 2-Propenenitrile

Use of the Substance/Preparation : chemical intermediate

Company : Du Pont de Nemours (Belgium) BVBA
DuPont Chemical Solutions Enterprise
Ketenislaan 1, Haven 1548
B-9130 Kallo
Belgium

Telephone : +32-3-730.2211

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Emergency telephone number : +44-(0)8456-006.640

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name of the substance : Acrylonitrile

Chemical Name	CAS-No.	EC-No.	Classification	Concentration [%]
Acrylonitrile	107-13-1		F; R11 Carc.Cat.2; R45 T; R23/24/25 Xi; R37/38 -R41 R43 N; R51 -R53	> 99,5

For the full text of the R phrases mentioned in this Section, see Section 16.

3. HAZARDS IDENTIFICATION

May cause cancer.
Highly flammable.
Toxic by inhalation, in contact with skin and if swallowed.
Irritating to respiratory system and skin.
Risk of serious damage to eyes.
May cause sensitization by skin contact.
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.



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4. FIRST AID MEASURES

- General advice : The first aid procedure should be established in consultation with the doctor responsible for industrial medicine. If no other measures are specified by national / local health authorities, the establishment, regular training and implementation of the following procedure is recommended: If not otherwise specified by medical personnel, the first aid kit should contain: 2 dozen amyl nitrite pearls; 2 x 0,5 l bottles of activated charcoal slurry, an oxygen respirator and detailed handling instructions. Also have on hand a treatment kit for use by the medical staff. Its content must be prescribed by the physician. Note: To prepare activated charcoal slurry, mix thoroughly 50 g of activated charcoal in 400 ml (about 2 cups) water.
- Inhalation : Remove from exposure, lie down. Oxygen or artificial respiration if needed. Call a physician immediately. Keep patient warm and at rest.
- If victim is unconscious but breathing: Administer amyl nitrite. Give oxygen. Never give anything by mouth to an unconscious person.
- Skin contact : Wash off immediately with plenty of water. Take off all contaminated clothing immediately. If signs of poisoning appear, treat as for inhalation.
- Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Obtain medical attention.
- Ingestion : If victim is conscious: Rinse mouth. Ingest immediately about 350 ml (5 ml/kg body weight) of activated charcoal slurry. Call a physician immediately. Give oxygen. Keep warm and in a quiet place.
- If victim is unconscious but breathing: Administer amyl nitrite. Give oxygen. Never give anything by mouth to an unconscious person.
- If victim has stopped breathing: Use oxygen resuscitator and administer amyl nitrite simultaneously.

5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : foam, dry chemical, carbon dioxide (CO₂),
- Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses. Vapours may form explosive mixtures with air. Do not use a solid water stream as it may scatter and spread fire. Flash back possible over considerable distance.
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus and protective suit.
- Further information : In the event of fire, cool tanks with water spray.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Wear personal protective equipment. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and



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- clothing. Remove all sources of ignition.
- Environmental precautions : Do not let product enter drains. Use appropriate container to avoid environmental contamination.
- Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Sweep up or vacuum up spillage and collect in suitable container for disposal. After cleaning, flush away traces with water.
- Additional advice : Dispose of in accordance with local regulations.

7. HANDLING AND STORAGE

Handling

- Advice on safe handling : Always have on hand a cyanide first-aid kit, together with proper instructions. Plan first aid action before beginning work with this product. Wear personal protective equipment. Avoid contact with skin and eyes. Provide adequate ventilation. Remove and wash contaminated clothing before re-use.

Storage

- Requirements for storage areas and containers : Store in a place accessible by authorized persons only. Keep locked up. Keep container tightly closed in a dry and well-ventilated place. Store in original container.
- Advice on common storage : Keep away from food and drink. Keep away from: combustible material alkali metals oxidizing agents acids
- Other data : Stable under recommended storage conditions.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Type Form of exposure	Control parameters	Update	Basis
Acrylonitrile	107-13-1	TWA	4,4 mg/m ³ 2 ppm	2002	EH40 MEL
			Skin designation: Can be absorbed through the skin.		

Engineering measures

Acrylonitrile vapours are uninhibited and may form polymers in vents or flame arrestors of storage tanks, resulting in stoppage of vents. Use only in area provided with appropriate exhaust ventilation.

Personal protective equipment

- Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. In the case of hazardous fumes, wear self contained breathing apparatus.

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Hand protection	:	Neoprene gloves, impervious gloves
Eye protection	:	tightly fitting safety goggles face-shield
Skin and body protection	:	lightweight protective clothing impervious clothing apron boots Remove and wash contaminated clothing before re-use.
Hygiene measures	:	Wash hands before breaks and immediately after handling the product. Wash contaminated clothing before re-use. When using do not eat, drink or smoke.
Protective measures	:	Plan first aid action before beginning work with this product. Always have on hand a cyanide first-aid kit, together with proper instructions.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	:	liquid,
Colour	:	colourless,
Odour	:	pungent,
pH	:	5,5 - 7,5 at 50 g/l (20 °C) (as aqueous solution)
Solidification point	:	-83,5 °C
Boiling point/range	:	77,3 °C at 1 013 hPa
Flash point	:	0 °C
Ignition temperature	:	481 °C
Thermal decomposition	:	500 °C,
Lower explosion limit	:	3,0 %(V)
Upper explosion limit	:	17,0 %(V)
Vapour pressure	:	117 hPa at 20 °C
Vapour pressure	:	133 hPa at 23 °C
Relative density	:	0,806 at 20 °C
Water solubility	:	73 g/l at 20 °C
Partition coefficient (n-octanol/water)	:	log Pow: 0,51
Viscosity, dynamic	:	0,34 mPa/s at 25 °C
Relative vapour density	:	1,83 at 20 °C

10. STABILITY AND REACTIVITY



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Materials to avoid	: Incompatible with bases., azo-compounds, Possible incompatibility with alkali sensitive materials., Incompatible with oxidizing agents.
Hazardous decomposition products	: hydrogen cyanide (hydrocyanic acid), Carbon monoxide, nitrogen oxides (NOx), Carbon oxides
Hazardous reactions	: Violent polymerisation can occur. Liquid acrylonitrile may attack many plastics, rubbers and coatings.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity

- Acrylonitrile : LD50/ rat : 78 mg/kg

Acute inhalation toxicity

- Acrylonitrile : LC50/ 4 h/ rat : 0,7 mg/l

Acute dermal toxicity

- Acrylonitrile : LD50/ rabbit : 226 mg/kg

Skin irritation

: rabbit
Irritating to skin.

Eye irritation

: rabbit
Moderate eye irritation

Sensitization

: guinea pig Causes sensitization.

Human experience

: Excessive exposures may affect human health, as follows:

Inhalation

irritation, damage, inflammation, headache, nausea, shortness of breath, vomiting, weakness, convulsions

Skin contact

irritation, burn, redness, swelling of tissue, rash, sensitization

Eye contact

irritation, lachrymation, pain, blurred vision, damage

Ingestion

burn, shortness of breath, nausea, headache, weakness, irregularities, convulsions, fatality

Further information

: Carcinogenic Category 2 Symptoms may be delayed.

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

Biodegradability

: Readily biodegradable.

Toxicity to fish

- Acrylonitrile : LC50 / 96 h/ Fathead minnow : 18,1 mg/l



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Aquatic toxicity

• Acrylonitrile : / EC50/ 48 h/ Daphnia: 7,6 - 10,95 mg/l

13. DISPOSAL CONSIDERATIONS

Product : Dispose of as special waste in compliance with local and national regulations.
Can be incinerated, when in compliance with local regulations.

Contaminated packaging : If recycling is not practicable, dispose of in compliance with local regulations.

14. TRANSPORT INFORMATION

ADR

Class: 3
Packaging group: I
Classification Code: FT1
HI No.: 336
UN-No: 1093
Labelling No.: 3, 6.1
Proper shipping name: Acrylonitrile, stabilized

IATA_C

Class: 3
Packaging group: I
UN-No: 1093
Labelling No.: 3, 6.1
Proper shipping name: Acrylonitrile, stabilized

IMDG

Class: 3
Packaging group: I
UN-No: 1093
Labelling No.: 3, 6.1
Proper shipping name: Acrylonitrile, stabilized

15. REGULATORY INFORMATION

Labelling according to EC Directives

Symbol(s) : F Highly flammable
T Toxic
N Dangerous for the environment

Hazardous components: Acrylonitrile

R-phrase(s) : R45 May cause cancer.
R11 Highly flammable.



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R23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
R37/38	Irritating to respiratory system and skin.
R41	Risk of serious damage to eyes.
R43	May cause sensitization by skin contact.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s)	:	S 9	Keep container in a well-ventilated place.
		S16	Keep away from sources of ignition - No smoking.
		S53	Avoid exposure - obtain special instructions before use.
		S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
		S61	Avoid release to the environment. Refer to special instructions/Safety data sheets.

16. OTHER INFORMATION

Text of R phrases mentioned in Section 2

R11	Highly flammable.
R23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
R37/38	Irritating to respiratory system and skin.
R41	Risk of serious damage to eyes.
R43	May cause sensitization by skin contact.
R45	May cause cancer.
R51	Toxic to aquatic organisms.
R53	May cause long-term adverse effects in the aquatic environment.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.



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