

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name EDN FUMIGAS
Synonym(s) 210 - SDS NUMBER • CYANOGEN • EDN • ETHANEDINITRILE

1.2 Uses and uses advised against

Use(s) FUMIGANT

1.3 Details of the supplier of the product

Supplier name BOC LIMITED (AUSTRALIA)
Address 10 Julius Avenue, North Ryde, NSW, 2113, AUSTRALIA
Telephone 131 262, (02) 8874 4400
Fax 132 427 (24 hours)
Website <http://www.boc.com.au>

1.4 Emergency telephone number(s)

Emergency 1800 653 572 (24/7) (Australia only)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

GHS classification(s) Gases Under Pressure: Liquefied gas
Acute Toxicity: Inhalation: Category 2
Aquatic Toxicity (Chronic): Category 1
Flammable Gases: Category 1

2.2 Label elements

Signal word DANGER

Pictogram(s)



Hazard statement(s)

H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.
H330 Fatal if inhaled.
H410 Very toxic to aquatic life with long lasting effects.

Prevention statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P284 Wear respiratory protection.

PRODUCT NAME EDN FUMIGAS**Response statement(s)**

P304 + P340 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P310 Immediately call a POISON CENTER or doctor/physician.
P320 Specific treatment is urgent - see first aid instructions.
P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 Eliminate all ignition sources if safe to do so.
P391 Collect spillage.

Storage statement(s)

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P410 + P403 Protect from sunlight. Store in a well-ventilated place.

Disposal statement(s)

P501 Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

Asphyxiant. Effects are proportional to oxygen displacement.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
CYANOGEN	460-19-5	207-306-5	100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye Cold burns: Immediately flush with tepid water or with sterile saline solution. Hold eyelids apart and irrigate for 15 minutes. Seek medical attention.

Inhalation If inhaled, remove from contaminated area. To protect rescuer, use an Air-line respirator or Self Contained Breathing Apparatus (SCBA). Apply artificial respiration if not breathing. Give oxygen if breathing is difficult. Seek immediate medical attention. For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor.

Skin Cold burns: Remove contaminated clothing and gently flush affected areas with warm water (30°C) for 15 minutes. Apply sterile dressing and treat as for a thermal burn. For large burns, immerse in warm water for 15 minutes. DO NOT apply any form of direct heat. Seek immediate medical attention.

Ingestion Ingestion is not considered a potential route of exposure.

First aid facilities No information provided.

4.2 Most important symptoms and effects, both acute and delayed

Over exposure can lead to cyanide poisoning which depresses the central nervous system. Symptoms include headache, weakness, confusion, nausea, dizziness, coma and even death. Mild exposure results in eyes, nose and throat irritation. Direct contact with the liquefied material or escaping compressed gas may cause frostbite injury.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Stop flow of gas if safe to do so, such as by slowly closing the cylinder valve.

5.2 Special hazards arising from the substance or mixture

Extremely flammable. Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, heaters, naked lights, pilot lights, mobile phones etc. when handling.

5.3 Advice for firefighters

Temperatures in a fire may cause cylinders to rupture and internal pressure relief devices to be activated. Cool cylinders or containers exposed to fire by applying water from a protected location. Do not approach cylinders or containers suspected of being hot. This material is capable of forming explosive mixtures in air.

5.4 Hazchem code

- 2PE
- 2 Fine Water Spray.
- P Risk of violent reaction or explosion. Wear liquid-tight chemical protective clothing and breathing apparatus. Dilute spill and run-off.
- E Evacuation of people in and around the immediate vicinity of the incident should be considered.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

If the cylinder is leaking, evacuate area of personnel. Inform manufacturer/supplier of leak. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Ensure adequate air ventilation. Eliminate all sources of ignition. Consider the risk of potentially explosive atmospheres.

6.2 Environmental precautions

Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

6.3 Methods of cleaning up

Carefully move material to a well ventilated remote area, then allow to discharge if safe to do so. Do not attempt to repair leaking valve or cylinder safety devices.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Do not drag, drop, slide or roll cylinders. The uncontrolled release of a gas under pressure may cause physical harm. Use a suitable hand truck for cylinder movement.

7.2 Conditions for safe storage, including any incompatibilities

Do not store near incompatible substances and heat or ignition sources. Replace outlet seals after use. Cylinders should be stored: upright, prevented from falling, in a secure area; below 45°C, in a dry, well ventilated area constructed of non-combustible material with firm level floor (preferably concrete), away from areas of heavy traffic and emergency exits.

7.3 Specific end use(s)

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Cyanogen	SWA (AUS)	10	21	--	--

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical explosion proof extraction ventilation is recommended. Flammable or explosive vapours may accumulate in confined or poorly ventilated areas. Vapours may travel some distance to an ignition source and flash back. Maintain atmospheric levels below the recommended exposure standard.

PRODUCT NAME EDN FUMIGAS**PPE**

- Eye / Face** Wear safety glasses.
- Hands** Wear elbow length chemical resistant gloves where in contact with liquid EDN or leather gloves where no contact.
- Body** Wear long sleeved shirt, long pants and safety boots.
- Respiratory** Wear full-face respirator with ABEK1 combination filter or Self Contained Breathing Apparatus (SCBA).
- After each day's use wash gloves, respirator and contaminated clothing.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	COLOURLESS LIQUEFIED GAS
Odour	ALMOND ODOUR
Flammability	EXTREMELY FLAMMABLE
Flash point	< 0°C
Boiling point	-21.17°C
Melting point	-27.9°C
Evaporation rate	NOT APPLICABLE
pH	NOT APPLICABLE
Vapour density	1.8 (Air = 1)
Specific gravity	NOT APPLICABLE
Solubility (water)	NOT AVAILABLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	32 %
Lower explosion limit	3.9 %
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

% Volatiles	100 %
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10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization will not occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxygen and fluorine, water or steam, and acid or acid fumes.

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	Fatal if inhaled. Readily reduced to cyanide and can cause acute cyanide poisoning. Symptoms reflect cellular hypoxia and are often nonspecific, but can include headache, weakness, lethargy, confusion, nausea, dizziness, coma and death.
	CYANOGEN LC50 (Inhalation): 350 ppm / 1 hour (rat)
Skin	Not classified as a skin irritant. Contact with the liquefied material or escaping compressed gas may cause frostbite injury.
Eye	Not classified as irritating to the eyes. Contact with the liquefied material or escaping compressed gas may cause frostbite injury.
Sensitization	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	Not classified as a mutagen.
Carcinogenicity	Not classified as a carcinogen.
Reproductive	Not classified as a reproductive toxin.
STOT – single exposure	Over exposure can lead to cyanide poisoning which depresses the central nervous system. Symptoms include headache, weakness, confusion, nausea, dizziness, coma and even death. Mild exposure results in eye, nose and throat irritation.
STOT – repeated exposure	Not classified as causing organ effects from repeated exposure.
Aspiration	Not relevant.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Return to manufacturer/supplier where possible for recycling/ reuse. Contact Waste Disposal Authorities in your State for further details and required approvals.
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE



PRODUCT NAME EDN FUMIGAS

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	1026	1026	1026
14.2 Proper Shipping Name	CYANOGEN	CYANOGEN	CYANOGEN
14.3 Transport hazard classes	2.3, 2.1	2.3, 2.1	2.3, 2.1
14.4 Packing Group	None Allocated	None Allocated	None Allocated

14.5 Environmental hazards No information provided

14.6 Special precautions for user

Hazchem code 2PE
 GTEPG 2B2
 EMS F-D, S-U

Other information Ensure cylinder is separated from driver and foodstuffs.

15. REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

Poison schedule Classified as a Schedule 7 (S7) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.
 The classifications and phrases listed below are based on the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004)].

Hazard codes
 F+ Extremely flammable
 N Dangerous for the environment
 T+ Very toxic

Risk phrases
 R12 Extremely Flammable.
 R26 Very toxic by inhalation.
 R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases
 S23 Do not breathe gas/fumes/vapour/spray (where applicable).
 S45 In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).
 S60 This material and its container must be disposed of as hazardous waste.
 S61 Avoid release to the environment. Refer to special instructions/safety data sheets.

Inventory listing(s) **AUSTRALIA: AICS (Australian Inventory of Chemical Substances)**
 All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information The storage of significant quantities of gas cylinders must comply with AS4332 The storage and handling of gases in cylinders.

APPLICATION METHOD: Gas withdrawal: Gas regulator of suitable pressure and flow rating fitted to cylinder or manifold with low pressure gas distribution to equipment.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a ChemAlert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Revision history

Revision	Description
2.6	Standard SDS Review
2.5	Standard SDS Review
2.4	Standard SDS Review
2.3	Standard SDS Review
2.2	Standard SDS Review
2.1	Standard SDS Review.
2.0	Standard SDS Review.

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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