BOC
A Member of The Linde Group

SAFETY DATA SHEET

 # 0210

Product Name **EDN FUMIGAS**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

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)
Emergency	1800 653 572 (24/7) (Australia only)
Web site	http://www.boc.com.au
Synonym(s)	210 - MSDS NUMBER • CYANOGEN • EDN • ETHANEDINITRILE
Use(s)	FUMIGANT
SDS date	20 June 2014

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Risk Phrases

R12	Extremely Flammable.
R23	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.

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

UN Number	1026	**Transport Hazard Classes**	2.3, 2.1
Packing Group	None Allocated	**Hazchem Code**	2PE

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Ingredient	Identification	Classification	Content
CYANOGEN	CAS: 460-19-5 EC: 207-306-5	F+;R12 T;R23 N;R50/53	100%

4. 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.

Advice to doctor Treat symptomatically.

5. FIRE FIGHTING MEASURES

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

Fire and explosion 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.

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

Hazchem code 2PE

2 Water Fog (or fine water spray if fog unavailable)

P Full protective equipment including Self Contained Breathing apparatus.

E Evacuation of people in the vicinity of the incident should be considered.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions If the cylinder is leaking, evacuate area of personnel. Inform manufacturer/supplier of leak. Use personal protective equipment as detailed in Section 8. Ventilate area where possible and eliminate ignition sources.

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

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.

References See Sections 8 and 13 for exposure controls and disposal.

7. STORAGE AND HANDLING

Storage 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.

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.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Cyanogen	SWA (AUS)	10	21	--	--

Biological limits No biological limit allocated.

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.

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

Appearance	COLOURLESS LIQUEFIED GAS
Odour	ALMOND ODOUR
Flammability	HIGHLY 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
% Volatiles	100 %

10. STABILITY AND REACTIVITY

Chemical stability	Stable under recommended conditions of storage.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources.
Material to avoid	Incompatible with oxygen and fluorine, water or steam, and acid or acid fumes.
Hazardous Decomposition Products	May evolve toxic gases if heated to decomposition.
Hazardous Reactions	Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary	Toxic. Cyanogen is considered toxic and may be fatal if inhaled or absorbed through skin. Contact with gas or liquefied gas may result in burns, severe injury and/or frostbite. Signs and symptoms of acute cyanide poisoning reflect cellular hypoxia and are often nonspecific.
Eye	Irritant. Contact may result in blindness and damage the optic nerves and retina. Contact with liquid could result in frostbite or cold burns.
Inhalation	Toxic. Over exposure may result in irritation of the nose and throat, coughing, weakness, nausea and vomiting. Chronic exposure may be fatal.
Skin	Corrosive. Contact may result in irritation and cold burns from evaporating liquid.

Ingestion Ingestion is considered unlikely due to product form. However, ingestion of liquid may result in burns to the mouth and throat.

Toxicity data CYANOGEN (460-19-5)

LC50 (inhalation)	350 ppm/1 hour (rat)
LDLo (subcutaneous)	13 mg/kg (rabbit)
TCLo (inhalation)	16 ppm (Human)

12. ECOLOGICAL INFORMATION

Toxicity No information provided.

Persistence and degradability No information provided.

Bioaccumulative potential No information provided.

Mobility in soil No information provided.

Other adverse effects No information provided.

13. DISPOSAL CONSIDERATIONS

Waste disposal Return to manufacturer 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

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
UN Number	1026	-	-
Proper Shipping Name	CYANOGEN	-	-
Transport Hazard Classes	2.3, 2.1	-	-
Packing Group	None Allocated	-	-

Environmental hazards No information provided

Special precautions for user

Hazchem code 2PE

GTEPG 2B2

Other information Ensure cylinder is separated from driver and foodstuffs.

15. REGULATORY INFORMATION

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

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: 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
GHS	Globally Harmonized System
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
PEL	Permissible Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
REACH	Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals
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
2.4	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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End of SDS