

MATERIAL SAFETY DATA SHEET (MSDS)

RIPEGAS

(Please ensure that this MSDS is received by the appropriate person)

Ref. no.: MS120 DATE: December 2015

1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT IDENTIFICATION

Product Names	RIPEGAS
Chemical Formula	C ₂ H ₄ plus N ₂
Trade Names	Ripegas 5 Ripegas 10 Banana Ripening gas
Colour coding	Biscuit (B.64) body with a Red (A11) shoulder. "RIPEGAS" followed by either "5" or "10" depicting the Ethylene percentage concentration, is stencilled on the body of the cylinder.
Valve	3 SH – Brass, 5/8 inch BSP left hand female.
Company Identification	African Oxygen Limited 23 Webber Street Johannesburg, 2001 Tel. No: (011) 490-0400 Fax No: (011) 490-0506

EMERGENCY NUMBER 0860111185 or (011) 873 4382
(24 hours)

2 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Ethylene plus Nitrogen
UN No.	1954
Hazchem Code:	2 SE
Hazchem Warning	2 A Flammable gas

3 HAZARDS IDENTIFICATION

Main Hazards	All cylinders are portable gas containers, and must be regarded as pressure vessels at all times. Although the constituents of Ripegas, ethylene and nitrogen, are both slightly lighter than air, the danger exists that pockets of oxygen-deficient air could be formed in the vicinity of a discharge of the gas.
Adverse Health effects	Inhalation of excessive quantities of Ripegas can result in dizziness, nausea, vomiting, loss of consciousness and death.
Chemical hazards	Both ethylene and nitrogen are inert under normal ambient conditions.
Biological hazards	No known effect
Vapour inhalation	As Ripegas acts as a simple asphyxiant death may result from errors in judgement, confusion, or loss of consciousness which prevents self-rescue. At low oxygen concentrations, unconsciousness and death may occur in seconds without warning.
Eye Contact	No known effect
Skin Contact	No known effect
Ingestion	(See "Vapour Inhalation" above)

4 FIRST AID MEASURES

Prompt medical attention is mandatory in all cases of overexposure to Ripegas. Rescue personnel should be equipped with self-contained breathing apparatus. Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be removed to an uncontaminated area, and given mouth-to-mouth resuscitation and supplemental oxygen.

Eye contact	No known effect
Skin contact	No known effect
Ingestion	(See Section 3 above)

For additional information refer to Section 3

5 FIRE FIGHTING MEASURES

Extinguishing media As the ethylene / nitrogen mixture is non-flammable, it would not contribute to the fire. Suitable extinguishing media should be used for the surrounding fire.

Specific hazards Ripegas does not support life. It can act as a simple asphyxiant by diluting the concentration of oxygen in the air below the levels to support life.

Emergency actions If possible, shut off the source of Ripegas. Evacuate area. All cylinders should be removed from the vicinity of the fire. Cylinders that cannot be removed should be cooled with water from a safe distance. Cylinders which have been exposed to excessive heat should be clearly identified and returned to the supplier. CONTACT THE NEAREST AFROX BRANCH.

Protective clothing Self-contained breathing apparatus. Safety gloves and shoes or boots should be worn when handling cylinders.

Environmental precautions Ripegas is lighter than air and disperses in the atmosphere. Care should be taken when entering a potentially oxygen-deficient environment. If possible, ventilate the affected area.

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions Do not enter any areas where Ripegas has been spilled unless tests have shown that it is safe to do so.

Environmental precautions Ripegas does not pose a hazard to the environment.

Small spills Shut off the source of the escaping Ripegas. Ventilate the area.

Large spills Evacuate the area. Shut off the source of the spill if this can be done without risk. Restrict access to the area until completion of the clean-up procedure. Ventilate the area using forced-draught if necessary.

7 HANDLING AND STORAGE

Do not allow cylinders to slide or come into contact with sharp edges. Ripegas cylinders may be stacked horizontally provided that they are firmly secured at each end to prevent rolling. Use a "first in - first out" inventory system to prevent full cylinders from being stored for excessive periods of time. Keep out of reach of children.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure hazards As Ripegas is a simple asphyxiant, avoid any areas where spillage has taken place. Only enter once testing has proved the atmosphere to be safe.

Engineering control measures Engineering control measures are preferred to reduce exposures to oxygen depleted atmospheres. General methods include forced-draught ventilation, separate from other exhaust ventilation systems. Ensure that sufficient fresh air enters at, or near, floor level.

Personal protection Self-contained breathing apparatus should always be worn when entering area where oxygen depletion may have occurred. Safety goggles, gloves and shoes, or boots, should be worn when handling cylinders.

Skin No known effect.

9 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DATA

Ethylene	
Chemical Symbol	C ₂ H ₄
Molecular Weight	28,054
Specific volume @ 20°C & 101,325 kPa	858,3 ml/g
Relative density of gas @ 101,325 kPa (Air = 1)	0,975
Colour	None
Taste	Sweet
Odour	Sweet

Nitrogen

Chemical Symbol	N ₂
Molecular Weight	28,013
Specific volume @ 20°C & 101,325 kPa	861,5 ml/g
Relative density of gas @ 101,325 kPa (Air = 1)	0,967
Colour	None
Taste	None

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Odour

None

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10 STABILITY AND REACTIVITY

Conditions to avoid The dilution of oxygen concentration in the atmosphere to levels which cannot support life. Never use cylinders as rollers or supports, or for any other purpose than the storing of Ripegas. Never expose the cylinders to excessive heat, as this may cause sufficient build-up of pressure to rupture the cylinders.

Incompatible materials As Ripegas is inert it may be contained in systems constructed of any of the common metals which have been designed to safely withstand the pressures involved.

Hazardous decomposition products None

11 TOXICOLOGICAL INFORMATION

Acute Toxicity Maximum permissible limit for workroom air should not exceed 5 500 ppm ethylene

Skin & eye contact No known effect

Chronic Toxicity No known effect

Carcinogenicity No known effect

Mutagenicity No known effect

Reproductive Hazards No known effect

(For further information see Section 3. Adverse health effects)

12 ECOLOGICAL INFORMATION

Ripegas is lighter than air and can cause pockets of oxygen-depleted atmosphere. It does not pose a hazard to the ecology.

13 DISPOSAL CONSIDERATIONS

Disposal Methods Small amounts may be blown to the atmosphere under controlled conditions. Large amounts should only be handled by the gas supplier.

Disposal of packaging The disposal of containers must only be handled by the gas supplier.

14 TRANSPORT INFORMATION

ROAD TRANSPORTATION

UN No. 1954

Hazchem code 2 SE

Hazchem warning 2A Flammable gas

SEA TRANSPORTATION

IMDG 1954

Class 2.1

Label Flammable gas

AIR TRANSPORTATION

ICAO/IATA Code 1954

Class 2.1

Packaging instructions

- Cargo 200

- Passenger Forbidden

Maximum quantity allowed

- Cargo 150 kg

- Passenger Forbidden

15 REGULATORY INFORMATION

EEC Hazard class Flammable gas

National legislation OHSact and Regulations 85 of 1993

SABS 10234 and its supplement for explanation of the above.

16 OTHER INFORMATION

Bibliography

Compressed Gas Association, Arlington, Virginia

Handbook of Compressed Gases - 3rd Edition

Matheson. Matheson Gas Data Book - 6th Edition

SABS 0265 - Labelling of Dangerous Substances

17 EXCLUSION OF LIABILITY

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