AFROX
A Member of The Linde Group

MATERIAL SAFETY DATA SHEET (MSDS)

FOODFRESH PACKAGING GAS MIXTURE

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

Date: February 2017 Version2

Ref. no.: MS125

1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT IDENTIFICATION

Product Names	FOODFRESH PACKAGING GAS MIXTURE
Chemical Formula	O_2 plus CO_2 plus N_2
Trade Names	FoodFresh 12 through 18 FoodFresh 20 FoodFresh 24
Colour Coding	Ivory body with the relevant grade stencilled on the body of the cylinder
Valve	3SO – Brass, 5/8 inch right hand female
Company Identification	African Oxygen Limited 23 Webber Street Johannesburg, 2001 Tel. No: (011) 490-0400 Fax No: (011) 490-0506 **Emergency No.:0860 020202 or (011) 873 4382**

2 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Names	Oxygen plus Carbon Dioxide plus Nitrogen		
	Oxygen	Carbon Dioxide	Nitrogen
CAS Nos	7782 44-7	124-38-9	7727-37-9
UN No.	1072	1013	1066
UN No.	1956	(O2+CO2+N2 gas mixture)	
Hazchem Code:	2 TE		
Hazchem Warning	2C Non-flammable gas		

3 HAZARDS IDENTIFICATION

Main Hazards. All cylinders are portable gas containers, and must be regarded as pressure vessels at all times. The listed grades of FoodFresh do not support life. They can act as simple asphyxiants by diluting the concentration of oxygen in air below the level necessary to support life. They are all heavier than air, and will tend to concentrate at lower level

Adverse Health effects. The carbon dioxide component contained in these relevant grades of FoodFresh acts as a stimulant and a depressant on the central nervous system. Increase in the heart rate and blood pressure have been noted at a concentration of 7.6 percent, and dyspnea (laboured breathing), headaches dizziness and sweating occur if exposure at that level is prolonged

Chemical hazards. Both the carbon dioxide and nitrogen components of the listed grades of FoodFresh are relatively non-reactive and non-toxic. They will not burn or support combustion.

Biological hazards. The greatest physiological effect of carbon dioxide is to stimulate the respiratory centre, thereby controlling the volume and rate of respiration. It is able to cause dilation and constriction of blood vessels and is a vital constituent of the acid-base mechanism that controls the pH of the blood.

Vapour inhalation. At concentrations of 10 % and above of carbon dioxide, unconsciousness can result in one minute or less. Impairment in performance has been noted during prolonged exposure to concentrations of 3 percent carbon dioxide even when the oxygen concentration was 21 percent. 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 FoodFresh. Rescue personnel should be equipped with self-contained breathing apparatus. For the listed grades of FoodFresh that contain carbon dioxide, concentrations of 10 percent or more can produce unconsciousness or death. Lower concentrations may cause headache, sweating, rapid breathing, increased heartbeat, shortness of breath, dizziness, mental depression, visual disturbances and shaking. 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)

5 FIRE FIGHTING MEASURES

Extinguishing media. The listed range of FoodFresh mixtures do not support combustion, but could act as extinguishing media.

Specific hazards. The range of FoodFresh mixtures do not support life.

Emergency actions. If possible, shut off the source of excess FoodFresh. 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 supplier. CONTACT THE

NEAREST AFROX BRANCH.

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

Environmental Precautions. All the listed mixtures are heavier than air and could accumulate in low-lying areas. 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 area where FoodFresh has been spilled unless tests have shown that it is safe to do so.

Environmental Precautions.-FoodFresh does not pose a hazard to the environment

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

Large spills. Evacuate the area. Shut off the source of the spill if this can be done without risk. 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. FoodFresh cylinders may be stacked horizontally provided that they are firmly secured at each end to prevent rolling. Prevent dirt, grit of any sort, oil or any other lubricant from entering the cylinder valves, and store cylinders well clear of any corrosive influence, e.g. battery acid. Compliance with all relevant legislation is essential. 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 FoodFresh mixtures are simple asphyxiants, 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 exposure 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

Carbon Dioxide

Chemical Symbol	CO_2
Molecular Weight	44,01
Specific volume @ 20°C & 101,325 kPa	547 ml/g
Relative density of gas @ 101,325 kPa (Air = 1)	1,53
Colour	None
Taste	Acidic
Odour	None

Oxygen

Chemical Symbol	O_2
Molecular Weight	32,00
Specific volume @ 20°C & 101,325 kPa	755 ml/g
Relative density of gas @ 101,325 kPa (Air = 1)	1,053
Colour	None
Taste	None
Odour	None

Nitrogen

Chemical Symbol	N_2
Molecular Weight	28,013
Specific volume @ 20°C & 101,325 kPa	861,5ml/g
Relative density of gas @ 101,325 kPa (Air = 1)	0,967
Colour	None
Taste	None
Odour	None

10 STABILITY AND REACTIVITY

Conditions to avoid. The dilution of oxygen 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 FoodFresh. Never expose cylinders to excessive heat, as this may cause sufficient build-up of pressure to rupture the cylinders.

Incompatible materials. As dry FoodFresh mixtures are inert they 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	TLV 5000 vpm (for CO_2)
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

All of these listed grades of FoodFresh are heavier than air, and may cause pockets of oxygen depleted atmosphere on low-lying areas. They do 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.	1956
Hazchem code	2 TE
Hazchem warning	2C Non-flammable gas

SEA TRANSPORTATION

IMDG	1956
Class	2.2
Label	Non-flammable gas

AIR TRANSPORTATION

ICAO/IATA Code	1956
Class	2.2
Packaging instructions	
- Cargo	200
- Passenger	200
Maximum quantity allowed	
- Cargo	150 kg
- Passenger	75 kg

15 REGULATORY INFORMATION

EEC Hazard class	Non-flammable
National legislation	OHSact and regulations 85 of 1993
Reference standard	SANS 10234

16 OTHER INFORMATION

Bibliography
Compressed Gas Association, Arlington, Virginia
Handbook of Compressed Gases - 3rd Edition
Matheson. Matheson Gas Data Book - 6th Edition

17 EXCLUSION OF LIABILITY

Information contained in this publication is accurate at the date of publication. The company does not accept liability arising from the use of this information, or the use, application, adaptation or process of any products described herein.

For product and safety enquiries please phone

EMERGENCY N°:
0860020202 (24 hr)