

**MATERIAL SAFETY DATA SHEET (MSDS)
FOODFRESH (GRADE 22)**

Please ensure that this MSDS is received by an appropriate person

DATE: March 2023
Ref. No.: MSF02

Version 2

1 PRODUCT AND COMPANY IDENTIFICATION

Product Name FOODFRESH PACKAGING GAS
Chemical Formula CO₂ + O₂
Trade Names Foodfresh 22
Colour coding Ivory body with a sticker showing relevant grades
Valve Brass ¾ inch BSP right hand female.
Company Identification Les Gaz Industriels Ltd
 Pailles Road
 G.R.N.W. Republic of Mauritius
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 Fax No: (+230) 212-0235

EMERGENCY NUMBER (+230) 800 1133

2 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name Carbon Dioxide
Chemical Family Carbon Anhydride
Synonyms Carbonic Acid Gas
CAS No. 124-38-9
UN No. 1013
ERG No. 120
Hazard Warning 2 C Non-flammable Gas

Chemical Name Oxygen
Chemical Family Oxidant
CAS No 7782-44-7
UN No 1072
ERG No 122
Hazchem Warning 5 A Non-flammable Gas

3 HAZARDS IDENTIFICATION

Main Hazards

All cylinders are portable gas containers and must be regarded as pressure vessels at all times. Foodfresh 22 gas mixtures are non-flammable, but readily supports combustion. Never permit oil, grease or other readily combustible substance to come into contact with high concentrations of oxygen.

Adverse Health Effects

The inhalation of carbon dioxide/oxygen gas mixtures may produce sweating, nausea and headache in a small number of patients.

Chemical Hazards

Because of the high concentrations of oxygen in these gas mixtures, they will strongly support combustion.

Biological Hazards

No overdose effects are seen with carbon dioxide/oxygen gas mixtures.

Vapour Inhalation

When a carbon dioxide/oxygen gas mixture is inhaled, the carbon dioxide absorption from the lungs into the blood is rapid and a new equilibrium is established in alveolar solution in the plasma, but mostly either as bicarbonate or carbamino compound. The relative quantities in solution and as bicarbonate regulate the reaction of the blood and buffer any change in pH produced by stronger organic acids. The blood concentration of carbon dioxide is set at a higher level and the excretion of the gas is adjusted to maintain the new equilibrium by increasing output.

Eye/Skin Contact No known effect.

Ingestion (See "Vapour Inhalation" above)

Label Elements

Hazard Pictograms



May cause or intensify fire, oxidizer. Contains gas under pressure; may explode if heated.

P403: Store in a well-ventilated place.

P280: Wear protective gloves/eye/face protection.

4 FIRST AID MEASURES

Prompt medical attention is mandatory in all cases of overexposure to these FoodFresh gas mixtures. Rescue personnel should be cognisant of extreme fire hazard associated with oxygen-rich atmospheres. Conscious persons should be assisted to an uncontaminated area and inhale fresh air. They should be kept warm and quiet. Quick removal from the contaminated area is most important. The physician should be informed that the patient has experienced hyperoxia.

Eye contact No known effect

Skin contact No known effect

Ingestion (See section 3 above)

5 FIRE FIGHTING MEASURES

Extinguishing Media

As FoodFresh 22 are non-flammable, but strongly support combustion, the correct type of extinguishing media should be used depending on the combustible material involved.

Specific Hazards

FoodFresh 22 vigorously accelerate combustion. Materials that would not normally burn in air could combust vigorously in atmosphere having high concentrations of oxygen.

Emergency Actions

-If possible, shut off the source of excess FoodFresh 22. 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 SUPPLIER.

Protective Clothing

Safety goggles, gloves and shoes, or boots, should be worn when handling cylinders.

Environmental Precautions

As the gas is heavier than air, pockets of oxygen-enriched air could occur. These could lead to the fire spreading rapidly. If possible ventilate the affected area.

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions

Although FoodFresh 22 are not combustible, they will support and accelerate combustion. Clothes and other materials, not normally considered flammable, will burn fiercely in the presence of oxygen, and can be set alight by a single spark, or even hot cigarette ash.

Environmental Precautions

FoodFresh 22 do not pose a hazard to the environment. Beware of oxygen-enriched atmospheres coming into contact with readily combustible materials.

Small Spills

Shut off the source of FoodFresh 22. 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.

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7 HANDLING AND STORAGE

Do not allow cylinders to slide or come into contact with sharp edges. Cylinders of FoodFresh should not be stored near cylinders of acetylene or other combustible gases. 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

Avoid exposure to oxygen enriched atmospheres, as this could result in clothing becoming saturated by oxygen. On ignition the clothing could burn fiercely resulting in serious burns.

Engineering Control Measures

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

9 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DATA

Carbon Dioxide

| | |
|---|----------|
| Chemical Symbol | CO2 |
| 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 | O2 |
| 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 |

10 STABILITY AND REACTIVITY

Conditions to avoid

The build-up of oxygen-enriched atmospheres, as, depending on temperature, oxygen reacts with all of the elements, excepting the inert gases, to form oxides. These reactions can sometimes be violent, as with highly combustible materials such as oil and grease. 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

Since dry FoodFresh 19 and 22 are non-corrosive, most materials of construction are suitable. Avoid flammable materials (for further information see Section 3. Chemical Hazards)

Hazardous Decomposition Products

None

11 TOXICOLOGICAL INFORMATION

| | |
|----------------------|------------------------|
| Acute Toxicity | TLV 5000 vpm (for CO2) |
| 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

FoodFresh 19 and 22 are heavier than air, and care should be taken to avoid the formation of oxygen enriched pockets. 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 cylinders must only be handled by the gas supplier.

14 TRANSPORT INFORMATION

ROAD TRANSPORTATION

| | |
|-----------------|----------------------|
| UN No | 3156 |
| ERG No | 121 |
| Hazchem warning | 5A Non-flammable Gas |

SEA TRANSPORTATION

| | |
|-----------------------|-------------------|
| IMDG | 3156 |
| Class | 2.2 |
| Packaging group label | Non-flammable gas |

AIR TRANSPORTATION

| | |
|--------------------------|-------|
| ICAO/IATA Code | 3156 |
| Class | 2.2 |
| Packaging group | |
| Packaging instructions | |
| - Cargo | 200 |
| - Passenger | 200 |
| Maximum quantity allowed | |
| - Cargo | 150kg |
| - Passenger | 75kg |

15 REGULATORY INFORMATION

| | |
|--|---------------|
| EEC Hazard class | Non-flammable |
| Reference standard SANS 10234 | |
| Refer to SABS 0265 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

17 EXCLUSION OF LIABILITY

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