

**MATERIAL SAFETY DATA SHEET (MSDS)
FOODFRESH (GRADE 5,7,9,101)**

Please ensure that this MSDS is received by an appropriate person

DATE: March 2023
Ref. No.: MSF01

Version 2

1 PRODUCT AND COMPANY IDENTIFICATION

Product Name FOODFRESH PACKAGING GAS
Chemical Formula CO₂ + N₂
Trade Names Foodfresh 5
 Foodfresh 7
 Foodfresh 9
 Foodfresh 101
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
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EMERGENCY NUMBER (+230) 800 1133

2 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name Nitrogen
Chemical Family Inert gas
CAS No. 7727-37-9
UN No. 1066
ERG No. 121
Hazchem Warning 2 C Non-flammable Gas

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

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 levels necessary to support life. Foodfresh are all heavier than air, and will tend to concentrate at lower levels.

Adverse Health Effects

The carbon dioxide component, contained in the relevant grades of FoodFresh, acts as a stimulant and a depressant on the central nervous system. Increases in heart rate and blood pressure have been noted at a concentration of 7.6 percent, and dyspnoea (laboured breathing), headache, 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.

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.

Eye/Skin Contact No known effect.
Ingestion (See "Vapour Inhalation" above)

Label Elements

Hazard Pictograms



Precautionary Statements

H280: Contains gas under pressure, may explode if heated.
 P403: Store in a well-ventilated place
 P280: Wear protective gloves/eye protection/face protection.

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. They can act as simple asphyxiants by diluting the concentration of oxygen in the air below the levels to 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 SUPPLIER.

Protective Clothing

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

Environmental Precautions

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 escaping gas mixture. 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. The listed grades of FoodFresh 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 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 | 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 |

Nitrogen

| | |
|---|------------|
| Chemical Symbol | N2 |
| 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 |
| 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 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

The listed mixtures are heavier than air, but all can cause pockets of oxygen-depleted atmosphere in 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 cylinders must only be handled by the gas supplier.

14 TRANSPORT INFORMATION

ROAD TRANSPORTATION

| | |
|-----------------|----------------------|
| UN No | 1956 |
| ERG No | 121 |
| Hazchem warning | 2C Non-flammable Gas |

SEA TRANSPORTATION

| | |
|-----------------|-------------------|
| IMDG | 1956 |
| Class | 2.2 |
| Packaging group | |
| label | Non-flammable gas |

AIR TRANSPORTATION

| | |
|--------------------------|-------|
| ICAO/IATA Code | 1956 |
| 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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