

**SAFETY DATA SHEET (SDS)  
FOODFRESH (GRADES 1)**

Please ensure that this SDS is received by the appropriate persons

Review Date: 29/10/2021 v01

Emergency: 0860 02 02 02

Document Number: AFX-SDS-0042

**1. PRODUCT AND COMPANY IDENTIFICATION**

**Product:** Foodfresh Packaging Gas Mixtures  
**Chemical Formula:** CO<sub>2</sub>  
**Trade Name:** FoodFresh 1  
**Colour Coding:** Light Brunswick Green (5540-G30Y) body with the relevant grades stenciled on their bodies and Cloud white (0505-G20Y) valve guard  
**Product Code:** 518701-SE-C  
**Company Identification:** African Oxygen Limited  
Grayston Office Park Building 7  
128 Peter Road Sandown, Sandton, 2196  
Tel. No: (011) 490-0400  
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[www.afrox.com](http://www.afrox.com)

**Emergency Numbers:** 0860 02 02 02 (Afrox)

**Vapour Inhalation:**

**Eye Contact:**  
**Skin Contact:**  
**Ingestion:**  
**GHS Classification:**  
**GHS Pictogram:**

constituent of the acid-base mechanism that controls the pH of the blood.  
- 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% carbon dioxide even when the oxygen concentration was 21 %.  
No known effect.  
No known effect.  
(See "Vapour Inhalation" above).  
Respiratory sensitizers (Category 1).



**GHS Signal Words:**  
**GHS Hazard Statements:**

Danger

**GHS Precautionary Statements:**

H280  
- Contains gas under pressure, may explode if heated.  
**Storage:**  
P410+P403: Protect from sunlight. Store in a well-ventilated place.

**Other Hazards that do not result in classification:**

**Prevention:**  
P282: Wear cold insulating gloves/face shield/eye protection.  
**Response:**  
- P336: Thaw frosted parts with lukewarm water. Do not rub affected area.  
- P315: Get immediate medical advice/attention.  
**Storage:**  
P403: Store in well-ventilated place.  
- Asphyxiant in high concentrations.  
- Contact with liquid may cause cold burns/frostbite.

**2. HAZARD IDENTIFICATION**

**Classification:** Classification under the Globally Harmonized System of classification and labelling of chemicals (GHS).

**Emergency Overview:** Colour: None  
Odour: None  
Taste: Acidic  
Physical State: Compressed Gas  
Form: Gas under pressure

**Main Hazards:**  
- The listed grade of Foodfresh do not support life.  
- It can act as simple asphyxiants by diluting the concentration of oxygen in air below the levels necessary to support life.  
- As it is heavier than air it will concentrate at lower levels.

**Adverse Health Effects:**  
- The carbon dioxide component contained in the relevant grade 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 dyspnea (laboured breathing), headache, dizziness and sweating occur if exposure at that level is prolonged.

**Chemical Hazards:**  
- Carbon dioxide components for Foodfresh 1 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

**3. COMPOSITION OF INGREDIENTS**

**Chemical name:** Carbon dioxide (CO<sub>2</sub>)  
**Chemical family:** Carbon dioxide  
**CAS No:** 124-38-9  
**UN No:** 1013  
**ERG No:** 120  
**Hazard class:** 2.2  
**Hazchem Warning:** Non-flammable gas

**4. FIRST AID MEASURES**

**Eye contact:**  
- Rinse the eye with water immediately.  
- Remove contact lenses, if present and easy to do. Continue rinsing. Flush thoroughly with water for at least 15 minutes.

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**Skin Contact:** - Get immediate medical assistance. If medical assistance is not immediately available, flush an additional 15 minutes. Contact with evaporating liquid may cause frostbite or freezing of skin.

**Ingestion:** Ingestion is not considered a potential route of exposure.

**Inhalation:** - In high concentrations may cause asphyxiation.  
- Symptoms may include loss of mobility/consciousness.  
- Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self-contained breathing apparatus.  
- Keep victim warm and rested.  
- Call a doctor.  
- Apply artificial respiration if breathing stopped.  
- Low concentrations of CO<sub>2</sub> cause increased respiration and headache.

**Environmental Precautions:**

which is very cold and can cause frostbite?  
- Evacuate the area.  
- Prevent further leakage by shutting off the source of the spill if safe to do so.  
- Restrict access to the area until completion of the clean-up procedure.  
- Ventilate the area using forced draft if necessary.  
- Shut off the source of the escaping nitrogen.  
- Provide adequate ventilation.

**Methods and material for containment and cleaning up:**

**7. HANDLING AND STORAGE**

**Safe**

**Handling:**

- Avoid breathing gas.  
- Do not get in eyes, on skin, or on clothing.  
- This gas is heavier than air and in an enclosed space tends to accumulate near the floor, displacing air and pushing it upward. This creates an oxygen-deficient atmosphere near the floor. Ventilate space before entry. Verify sufficient oxygen concentration.  
- Wear leather safety gloves and safety shoes when handling cylinders.  
- Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover.  
- Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve.  
- When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders.  
- Never insert an object (e.g., wrench, screwdriver) into cap openings; doing so may damage the valve and cause a leak.  
- Use an adjustable strap wrench to remove over-tight or rusted caps.  
- Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier.  
- Close the container valve after each use; keep closed even when empty.  
- Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents.  
- Containers should not be stored in conditions likely to encourage corrosion.  
- Stored containers should be periodically checked for general conditions and leakage.  
- Container valve guards or caps should be in place.

**Conditions for safe storage, including any incompatibilities:**

**5. FIRE-FIGHTING**

**Suitable extinguishing media:** Material will not burn. In case of fire in the surroundings: use appropriate extinguishing agent.

**Unsuitable extinguishing media:** None.

**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.

**Special fire fighting procedures:** - In case of fire: Stop leak if safe to do so.  
- Continue water spray from protected position until container stays cool.  
- Use extinguishants to contain the fire.  
- Isolate the source of the fire or let it burn out.

**Special protective equipment for firefighters:** Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, self-contained breathing apparatus.

**6. ACCIDENTAL RELEASE**

**Personal precautions, protective equipment and emergency procedures:** - Evacuate area.  
- Provide adequate ventilation.  
- Prevent from entering sewers and workpits, or any place where its accumulation can be dangerous.  
- Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.  
- Rapid release of gaseous carbon dioxide through a pressure relief device or valve can result in the formation of dry ice,

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- Store containers in location free from fire risk and away from sources of heat and ignition.

- Keep away from combustible material.

**Odour Threshold:**

Odour threshold is subjective and is inadequate to warn of over exposure.

**pH:**

3.2 - 3.7

**Melting Point:**

-56.6 °C

**Boiling Point:**

-78.5 °C

**Sublimation Point:**

-78.5 °C

**Critical Temp. (°C):**

31.0 °C

**Flash Point:**

Not applicable.

**Evaporation Rate:**

Not applicable.

**Flammability (solid, gas):**

This product is not flammable.

**Flammability limit - upper (%):**

Not applicable.

**Flammability limit - lower (%):**

Not applicable.

**Vapour pressure:**

45.1 bar (10 °C)

**Vapour density (air=1):**

1.522 (21 °C)

**Relative density:**

1.512 (-56.6 °C)

**Solubility in Water:**

Completely soluble.

**Partition coefficient (n-octanol/water):**

0.83

**Autoignition Temperature:**

Not applicable.

**Decomposition Temperature:**

Not known.

**Viscosity**

**Kinematic viscosity:**

No data available.

**Dynamic viscosity:**

**Dynamic viscosity:**

0.07 mPa.s (20 °C)

**Explosive properties:**

Not applicable

**Oxidising Properties:**

Not applicable

**8. EXPOSURE CONTROLS AND PERSONAL PROTECTION**

**Occupational Exposure Hazards (HCS):**

- TWA 5000 ppm  
- STEL 15000 ppm

**Engineering Control Measures:**

- Consider a work permit system e.g., for maintenance activities.  
- Ensure adequate air ventilation.  
- Oxygen detectors should be used when asphyxiating gases may be released.  
- Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded.  
- Systems under pressure should be regularly checked for leakages. Preferably use permanent leak tight connections (e.g., welded pipes).  
- Do not eat, drink or smoke when using the product.  
- CO<sub>2</sub> detectors should be used when CO<sub>2</sub> may be released.

**Personal protection:**

- A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk.

**Eyes:**

Wear safety glasses when handling cylinders; vapor-proof goggles and a face shield during cylinder changeout or whenever contact with product is possible.

**Hands:**

Wear working gloves while handling containers.

**Body protection:**

No special precautions.

**Feet:**

Wear safety shoes while handling containers.

**10. STABILITY AND REACTIVITY**

**Reactivity:**

No reactivity hazard other than the effects described in sub-section below.

**Chemical stability:**

Stable under normal conditions.

**Possibility of hazardous reactions:**

None.

**Conditions to avoid:**

None.

**Incompatible Materials:**

No reaction with any common materials in dry or wet conditions.

**Hazardous Decomposition of Products:**

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Chemical Name:**

Carbon Dioxide

**Chemical Symbol:**

CO<sub>2</sub>

**Appearance**

**Physical state:**

Gas

**Form:**

Liquefied gas

**Colour:**

Colourless

**Odour:**

Odourless

**11. TOXOLOGICAL INFORMATION**

**Acute Toxicity:**

Not classified

**Skin & eye contact:**

Not classified

**Chronic Toxicity:**

Not classified

**Carcinogenicity:**

Not classified

**Mutagenicity:**

Not classified

**Reproductive Hazards:**

Not classified

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**12. ECOLOGICAL INFORMATION**

<b>Toxicity:</b>	No ecological damage caused by this product.
<b>Persistence and degradability:</b>	No ecological damage caused by this product.
<b>Mobility in soil:</b>	No data available.
<b>Ecology - soil:</b>	No ecological damage caused by this product.
<b>Results of PBT and vPvB assessment:</b>	Not classified as PBT or vPvB.
<b>Other adverse effects:</b>	No ecological damage caused by this product.
<b>Effect on ozone layer:</b>	None.
<b>Effect on the global warming:</b>	When discharged in large quantities may contribute to the greenhouse effect.

**13. DISPOSAL CONSIDERATIONS**

<b>Disposal Methods:</b>	- Dispose of container via supplier only. - For more detailed information or guidance contact the nearest Afrox branch.
<b>Disposal of Packaging:</b>	The container is the property of the supplier and the disposal of the containers must only be handled by the supplier.

**14. TRANSPORT INFORMATION**

**Road Transportation**

<b>UN No:</b>	1013
<b>Shipping Name:</b>	Carbon Dioxide
<b>ERG No:</b>	120
<b>Class:</b>	2.2
<b>Subsidiary Risk:</b>	Chemical Asphyxiant
<b>Hazchem Warning:</b>	Non-flammable gas

**Sea Transportation**

<b>IMDG:</b>	1013
<b>Shipping Name:</b>	Carbon Dioxide
<b>ERG No:</b>	120
<b>Class:</b>	2.2
<b>Subsidiary Risk:</b>	Chemical Asphyxiant
<b>Label:</b>	Non-flammable gas

**Air Transportation**

<b>ICAO/IATA Code:</b>	1013
<b>Class:</b>	2.2
<b>Subsidiary risk:</b>	Chemical Asphyxiant
<b>Packaging instructions:</b>	- Cargo: 200 kg - Passenger: 200 kg
<b>Maximum quantity allowed:</b>	- Cargo: 150 kg - Passenger: 75 kg

**15. REGULATORY INFORMATION**

<b>SANS11014:2010 Edition 1:</b>	Safety data sheet for chemical products - Content and order of sections.
<b>SANS 10228:2012 Edition 6:</b>	The identification and classification of dangerous goods for transport by road and rail modes.
<b>SANS 10234:2019 Edition 2:</b>	Globally Harmonized System of classification and labelling of chemicals (GHS).
<b>SUPPLEMENT TO SANS 10234 Edition 1:</b>	List of classification and labelling of chemicals in accordance with the Globally Harmonized System (GHS).

**16. OTHER INFORMATION**

- Ensure all national/local regulations are observed.
- Ensure users and relevant persons understand the asphyxiation hazard.
- Regularly check suppliers information sources for updated versions of SDS's.

**Revision Date:** 29/10/2021 v01

**BIBLIOGRAPHY**

Compressed Gas Association, Arlington, Virginia  
Handbook of Compressed Gases - 3rd Edition  
Matheson. Matheson Gas Data Book - 6th Edition  
SABS 0625 - Labelling of Dangerous Substances

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