# Gas Mixture (0.1-99.9% Carbon Dioxide, 0.1-99.9% Nitrogen)

**Safety Data Sheet P-19-6517**


**Date of issue:** 01/01/1985  
**Revision date:** 07/21/2015  
**Supersedes:** 05/17/2015

## SECTION: 1. Product and company identification

### 1.1. Product identifier

<table>
<thead>
<tr>
<th>Product form</th>
<th>Mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other means of identification</td>
<td>Extendapak, Mediblend; Industrial Gas Mixes</td>
</tr>
</tbody>
</table>

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

| Use of the substance/mixture | Medical applications.  
Food applications.  
Industrial use |

### 1.3. Details of the supplier of the safety data sheet

- **Praxair, Inc.**  
  39 Old Ridgebury Road  
  Danbury, CT 06810-5113 - USA  
  T 1-800-772-9247 (1-800-PRAXAIR) - F 1-716-879-2146  
  [www.praxair.com](http://www.praxair.com)

### 1.4. Emergency telephone number

| Emergency number | Onsite Emergency: 1-800-645-4633  
CHEMTREC, 24hr/day 7days/week  
— Within USA: 1-800-424-9300, Outside USA: 001-703-527-3887 (collect calls accepted, Contract 17729) |

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

**Classification (GHS-US)**  
Compressed gas  
H280

### 2.2. Label elements

**GHS-US labeling**

- **Hazard pictograms (GHS-US)**: ![](image)

- **Signal word (GHS-US)**: WARNING

- **Hazard statements (GHS-US)**:  
  - H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED  
  - H380 - MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION  
  - CGA-HG03 - MAY INCREASE RESPIRATION AND HEART RATE.

- **Precautionary statements (GHS-US)**:  
  - P202 - Do not handle until all safety precautions have been read and understood  
  - P261 - Avoid breathing gas  
  - P262 - Do not get in eyes, on skin, or on clothing.  
  - P271+P403 - Use and store only outdoors or in a well-ventilated place.  
  - CGA-PG05 - Use a back flow preventive device in the piping.  
  - CGA-PG10 - Use only with equipment rated for cylinder pressure.  
  - CGA-PG06 - Close valve after each use and when empty.  
  - CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F).

### 2.3. Other hazards

| Other hazards not contributing to the classification | Most of these mixtures are asphyxiants. Effects are due to lack of oxygen. Mixtures containing carbon dioxide are also physiologically active, affecting circulation and breathing. Moderate concentrations may cause headache, drowsiness, dizziness, stinging of the nose and throat, |

**EN (English US)**  
**SDS ID:** P-19-6517

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excitation, rapid breathing, excess salivation, vomiting, and unconsciousness. Lack of oxygen can kill.

2.4. Unknown acute toxicity (GHS-US)
No data available

SECTION 3: Composition/information on ingredients

3.1. Substance
Not applicable

3.2. Mixture

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon dioxide</td>
<td>(CAS No) 124-38-9</td>
<td>0.1 - 99.9</td>
</tr>
<tr>
<td>Nitrogen</td>
<td>(CAS No) 7727-37-9</td>
<td>0.1 - 99.9</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1. Description of first aid measures
First-aid measures after inhalation: Immediately remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, qualified personnel may give oxygen. Call a physician.
First-aid measures after skin contact: Adverse effects not expected from this product.
First-aid measures after eye contact: Adverse effects not expected from this product. In case of eye irritation: Rinse immediately with plenty of water. Consult an ophthalmologist if irritation persists.
First-aid measures after ingestion: Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects, both acute and delayed
No additional information available

4.3. Indication of any immediate medical attention and special treatment needed
No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media: Use extinguishing media appropriate for surrounding fire.

5.2. Special hazards arising from the substance or mixture
Reactivity: Under certain conditions, nitrogen can react violently with lithium, neodymium, titanium (above 1472°F/800°C), and magnesium to form nitrides. At high temperature, it can also combine with oxygen and hydrogen.

5.3. Advice for firefighters
Firefighting instructions: Compressed gas: asphyxiant
Suffocation hazard by lack of oxygen
Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1910 Subpart L—Fire Protection.
Special protective equipment for fire fighters: Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.
Other information: Containers are equipped with a pressure relief device. (Exceptions may exist where authorized by DOT.).
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures: Compressed gas: asphyxiant. Evacuate personnel to a safe area. Appropriate self-contained breathing apparatus may be required. Approach suspected leak area with caution. Remove all sources of ignition. If safe to do so. Reverse flow into cylinder may cause rupture. Reduce gas with fog or fine water spray. Stop flow of product if safe to do so. Ventilate area or move container to a well-ventilated area. Before entering the area, especially a confined area, check the atmosphere with an appropriate device.

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Try to stop release.

6.3. Methods and material for containment and cleaning up

No additional information available

6.4. Reference to other sections

See also sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling: 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, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove overtight 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. For other precautions in using this product, see section 16.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in a cool, well-ventilated place. Store and use with adequate ventilation. Store only where temperature will not exceed 125°F (52°C). Firmly secure containers upright to keep them from falling or being knocked over. Install valve protection cap; if provided, firmly in place by hand. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods.

OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE: When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

7.3. Specific end use(s)

None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| Gas Mixture (0.1-99.9% Carbon Dioxide, 0.1-99.9% Nitrogen) | ACGIH | Not established |

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### Gas Mixture (0.1-99.9% Carbon Dioxide, 0.1-99.9% Nitrogen)

<table>
<thead>
<tr>
<th>Carbon dioxide (124-38-9)</th>
<th>Nitrogen (7727-37-9)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACGIH</strong> ACGIH TLV-TWA (ppm)</td>
<td><strong>ACGIH</strong> Not established</td>
</tr>
<tr>
<td>5000 ppm</td>
<td></td>
</tr>
<tr>
<td><strong>ACGIH</strong> ACGIH TLV-STEL (ppm)</td>
<td></td>
</tr>
<tr>
<td>30000 ppm</td>
<td></td>
</tr>
<tr>
<td><strong>USA OSHA</strong> OSHA PEL (TWA) (mg/m³)</td>
<td><strong>USA OSHA</strong> Not established</td>
</tr>
<tr>
<td>9000 mg/m³</td>
<td></td>
</tr>
<tr>
<td><strong>USA OSHA</strong> OSHA PEL (TWA) (ppm)</td>
<td></td>
</tr>
<tr>
<td>5000 ppm</td>
<td></td>
</tr>
</tbody>
</table>

### 8.2. Exposure controls

- **Appropriate engineering controls**: Use a local exhaust system with sufficient flow velocity to maintain an adequate supply of air in the worker's breathing zone. Mechanical (general): General exhaust ventilation may be acceptable if it can maintain an adequate supply of air.
- **Eye protection**: Wear safety glasses with side shields.
- **Respiratory protection**: When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure (e.g., an organic vapor cartridge). For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

- **Physical state**: Gas
- **Appearance**: Colorless gas.
- **Color**: Colorless.
- **Odor**: Odorless.
- **Odor threshold**: No data available
- **pH**: Not applicable.
- **Relative evaporation rate (butyl acetate=1)**: No data available
- **Relative evaporation rate (ether=1)**: Not applicable.
- **Melting point**: No data available
- **Freezing point**: No data available
- **Boiling point**: No data available
- **Flash point**: No data available
- **Auto-ignition temperature**: Not applicable.
- **Decomposition temperature**: No data available
- **Flammability (solid, gas)**: No data available
- **Vapor pressure**: Not applicable.
- **Relative vapor density at 20 °C**: No data available
- **Relative density**: No data available
- **Relative gas density**: 0.968 - 1.244
- **Solubility**: Water: Solubility in water of component(s) of the mixture:
  - Carbon dioxide: 2000 mg/l Completely soluble.
  - Nitrogen: 20 mg/l

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Log Pow : Not applicable.
Log Kow : Not applicable.
Viscosity, kinematic : Not applicable.
Viscosity, dynamic : Not applicable.
Explosive properties : Not applicable.
Oxidizing properties : None.
Explosion limits : No data available

9.2. Other information
Gas group : Compressed gas
Additional information : None.

SECTION 10: Stability and reactivity

10.1. Reactivity
Under certain conditions, nitrogen can react violently with lithium, neodymium, titanium (above 1472°F/800°C), and magnesium to form nitrides. At high temperature, it can also combine with oxygen and hydrogen.

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
May occur.

10.4. Conditions to avoid
None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials
None.

10.6. Hazardous decomposition products
None.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified
Skin corrosion/irritation : Not classified
  pH: Not applicable.
Serious eye damage/irritation : Not classified
  pH: Not applicable.
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
Specific target organ toxicity (single exposure) : Not classified
Specific target organ toxicity (repeated exposure) : Not classified
Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity
Ecology - general : No ecological damage caused by this product.
12.2. Persistence and degradability

**Gas Mixture (0.1-99.9% Carbon Dioxide, 0.1-99.9% Nitrogen)**

Persistence and degradability
No ecological damage caused by this product.

**Carbon dioxide (124-38-9)**

Persistence and degradability
No ecological damage caused by this product.

**Nitrogen (7727-37-9)**

Persistence and degradability
No ecological damage caused by this product.

12.3. Bioaccumulative potential

**Gas Mixture (0.1-99.9% Carbon Dioxide, 0.1-99.9% Nitrogen)**

Log Pow
Not applicable.

Log Kow
Not applicable.

Bioaccumulative potential
No ecological damage caused by this product.

**Carbon dioxide (124-38-9)**

BCF fish 1
(no bioaccumulation)

Log Pow
0.83

Log Kow
Not applicable.

Bioaccumulative potential
No ecological damage caused by this product.

**Nitrogen (7727-37-9)**

Log Pow
Not applicable for inorganic gases.

Log Kow
Not applicable.

Bioaccumulative potential
No ecological damage caused by this product.

12.4. Mobility in soil

**Gas Mixture (0.1-99.9% Carbon Dioxide, 0.1-99.9% Nitrogen)**

Mobility in soil
No data available.

Ecology - soil
No ecological damage caused by this product.

**Carbon dioxide (124-38-9)**

Mobility in soil
No data available.

Ecology - soil
No ecological damage caused by this product.

**Nitrogen (7727-37-9)**

Mobility in soil
No data available.

Ecology - soil
No ecological damage caused by this product.

12.5. Other adverse effects

Effect on ozone layer
None.

Effect on the global warming
None.

**SECTION 13: Disposal considerations**

13.1. Waste treatment methods

Waste disposal recommendations
Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

**SECTION 14: Transport information**

In accordance with DOT

Transport document description
UN1956 Compressed gas, n.o.s., 2.2

UN-No.(DOT)
UN1956

Proper Shipping Name (DOT)
Compressed gas, n.o.s.

Transport hazard class(es) (DOT)
2.2 - Class 2.2 - Non-flammable compressed gas 49 CFR 173.115
Hazard labels (DOT) : 2.2 - Non-flammable gas

DOT Symbols : G - Identifies proper shipping name (PSN) requiring the addition of technical name(s) in parentheses following the PSN.

Additional information
Emergency Response Guide (ERG) Number : 121 (UN1066); 120 (UN1977)
Other information : No supplementary information available.
Special transport precautions : Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers:
- Ensure there is adequate ventilation.
- Ensure that containers are firmly secured.
- Ensure cylinder valve is closed and not leaking.
- Ensure valve outlet cap nut or plug (where provided) is correctly fitted.
- Ensure valve protection device (where provided) is correctly fitted.

Transport by sea
UN-No. (IMDG) : 1956
Proper Shipping Name (IMDG) : COMPRESSED GAS, N.O.S.
Class (IMDG) : 2 - Gases
MFAG-No : 121

Air transport
UN-No. (IATA) : 1956
Proper Shipping Name (IATA) : Compressed gas, n.o.s.
Class (IATA) : 2
Civil Aeronautics Law : Gases under pressure/Gases nonflammable nontoxic under pressure

SECTION 15: Regulatory information
15.1. US Federal regulations
Gas Mixture (0.1-99.9% Carbon Dioxide, 0.1-99.9% Nitrogen) Listed on the United States TSCA (Toxic Substances Control Act) inventory
SARA Section 311/312 Hazard Classes
Sudden release of pressure hazard
Immediate (acute) health hazard

15.2. International regulations
CANADA
Gas Mixture (0.1-99.9% Carbon Dioxide, 0.1-99.9% Nitrogen) Listed on the Canadian DSL (Domestic Substances List)
Carbon dioxide (124-38-9)
Listed on the Canadian DSL (Domestic Substances List)
Nitrogen (7727-37-9)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations
Gas Mixture (0.1-99.9% Carbon Dioxide, 0.1-99.9% Nitrogen) Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
**15.2.2 National regulations**

**Gas Mixture (0.1-99.9% Carbon Dioxide, 0.1-99.9% Nitrogen)**

- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on IECS (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

**15.3. US State regulations**

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>U.S. - California - Proposition 65 - Carcinogens List</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>U.S. - California - Proposition 65 - Developmental Toxicity</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>State or local regulations</strong></td>
<td>U.S. - Massachusetts - Right To Know List</td>
</tr>
<tr>
<td></td>
<td>U.S. - New Jersey - Right to Know Hazardous Substance List</td>
</tr>
<tr>
<td></td>
<td>U.S. - Pennsylvania - RTK (Right to Know) List</td>
</tr>
</tbody>
</table>

### Carbon dioxide (124-38-9)

<table>
<thead>
<tr>
<th>U.S. - California - Proposition 65 - Carcinogens List</th>
<th>U.S. - California - Proposition 65 - Developmental Toxicity</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</th>
<th>No significant risk level (NSRL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>No</td>
<td>No</td>
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### Nitrogen (7727-37-9)

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</table>

### Carbon dioxide (124-38-9)

- U.S. - Massachusetts - Right To Know List
- U.S. - New Jersey - Right to Know Hazardous Substance List
- U.S. - Pennsylvania - RTK (Right to Know) List

### Nitrogen (7727-37-9)

- U.S. - Massachusetts - Right To Know List
- U.S. - New Jersey - Right to Know Hazardous Substance List
- U.S. - Pennsylvania - RTK (Right to Know) List

**SECTION 16: Other information**

**Revision date**

7/21/2015 12:00:00 AM
Other information: When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product.

Praxair asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information.

The opinions expressed herein are those of qualified experts within Praxair, Inc. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use are not within the control of Praxair, Inc., it is the user's obligation to determine the conditions of safe use of the product.

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NFPA health hazard: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.
NFPA fire hazard: 0 - Materials that will not burn.
NFPA reactivity: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.
NFPA specific hazard: SA - This denotes gases which are simple asphyxiants.

HMIS III Rating
Health: 0 Minimal Hazard - No significant risk to health
Flammability: 0 Minimal Hazard
Physical: 1 Slight Hazard

SDS US (GHS HazCom 2012) - Praxair

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.