

# Gas Mixture (23.5-90% Oxygen, 0.0001-76.5% Carbon Dioxide, 5-76.5% Nitrogen)

## Safety Data Sheet P-6232

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 06/01/2000    Revision date: 04/25/2017    Supersedes: 02/08/2017

### SECTION: 1. Product and company identification

#### 1.1. Product identifier

Product form : Mixture  
 Product name : Gas Mixture (23.5-90% Oxygen, 0.0001-76.5% Carbon Dioxide, 5-76.5% Nitrogen)  
 Formula : Mixtures of nitrogen, carbon dioxide, and oxygen  
 Other means of identification : Extendapak Food Gases EX 39, 40, 43, 45, 52-54, 59, 60, 64, and 69, Medipure

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

Use of the substance/mixture : Food applications.  
 Medical applications.  
 Industrial use. Use as directed.

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

Praxair, Inc.  
 10 Riverview Drive  
 Danbury, CT 06810-6268 - 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: Hazard identification

#### 2.1. Classification of the substance or mixture

##### GHS-US classification

Ox. Gas 1 H270  
 Liquefied gas H280

#### 2.2. Label elements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H270 - MAY CAUSE OR INTENSIFY FIRE; OXIDIZER  
 H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED  
 CGA-HG01 - MAY CAUSE FROSTBITE.  
 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  
 P220 - Keep/Store away from combustible materials  
 P244 - Keep valves and fittings free from oil and grease  
 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.  
 P370+P376 - In case of fire: Stop leak if safe to do so  
 CGA-PG05 - Use a back flow preventive device in the piping.  
 CGA-PG20+CGA-PG10 - Use only with equipment of compatible materials of construction and

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rated for cylinder pressure.  
CGA-PG21 - Open valve slowly.  
CGA-PG06 - Close valve after each use and when empty.

### 2.3. Other hazards

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

No data available

## SECTION 3: Composition/Information on ingredients

### 3.1. Substance

Not applicable

### 3.2. Mixture

Name	Product identifier	%
Oxygen	(CAS No) 7782-44-7	23.5 - 90
Carbon dioxide	(CAS No) 124-38-9	0.0001 - 76.5
Nitrogen	(CAS No) 7727-37-9	5 - 76.5

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

- First-aid measures after inhalation : Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
- First-aid measures after skin contact : Wash with plenty of soap and water. For exposure, immediately warm frostbite area with warm water not to exceed 105°F (41°C). Water temperature should be tolerable to normal skin. Maintain skin warming for at least 15 minutes or until normal coloring and sensation have returned to the affected area. In case of massive exposure, remove clothing while showering with warm water. Seek medical evaluation and treatment as soon as possible.
- First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Contact an ophthalmologist immediately.. Get immediate medical attention.
- 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

None.

## 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 : No reactivity hazard other than the effects described in sub-sections below.

### 5.3. Advice for firefighters

- Firefighting instructions : 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.
- Protection during firefighting : Compressed gas: asphyxiant. Suffocation hazard by lack of oxygen.
- Special protective equipment for fire fighters : Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.

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Specific methods	: Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas containers to rupture. Cool endangered containers with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems.  Stop flow of product if safe to do so.  Use water spray or fog to knock down fire fumes if possible.
Other information	: Containers are equipped with a pressure relief device. (Exceptions may exist where authorized by DOT.)  If venting or leaking gas catches fire, do not extinguish flames. Flammable vapors may spread from leak, creating an explosive reignition hazard. Vapors can be ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharge, or other ignition sources at locations distant from product handling point. Explosive atmospheres may linger. Before entering an area, especially a confined area, check the atmosphere with an appropriate device.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Evacuate area. Ensure adequate air ventilation. Wear self-contained breathing apparatus when entering area unless atmosphere is proven to be safe. Stop leak if safe to do so.

##### 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

No additional information available

#### 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 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. For other precautions in using this product, see section 16.



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### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store only where temperature will not exceed 125°F (52°C). Post "No Smoking/No Open Flames" signs in storage and use areas. There must be no sources of ignition. Separate packages and protect against potential fire and/or explosion damage following appropriate codes and requirements (e.g. NFPA 30, NFPA 55, NFPA 70, and/or NFPA 221 in the U.S.) or according to requirements determined by the Authority Having Jurisdiction (AHJ). Always secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand when the container is not in use. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods. For other precautions in using this product, see section 16.

**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

Carbon dioxide (124-38-9)		
ACGIH	ACGIH TLV-TWA (ppm)	5000 ppm
ACGIH	ACGIH TLV-STEL (ppm)	30000 ppm
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (TWA) (ppm)	5000 ppm
Oxygen (7782-44-7)		
ACGIH	Not established	
USA OSHA	Not established	
Nitrogen (7727-37-9)		
ACGIH	Not established	
USA OSHA	Not established	

### 8.2. Exposure controls

Appropriate engineering controls : Oxygen detectors should be used when asphyxiating gases may be released. Systems under pressure should be regularly checked for leakages. Provide adequate general and local exhaust ventilation. Consider work permit system e.g. for maintenance activities.

Hand protection : Wear working gloves when handling gas containers.

Eye protection : Wear safety glasses with side shields.

Respiratory protection : Self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmospheres.

Thermal hazard protection : None necessary.

Environmental exposure controls : Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

Other information : Wear safety shoes while handling containers.

## SECTION 9: Physical and chemical properties

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

Physical state : Gas  
Color : Colorless

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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	: No data available
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	: 1 - 1.38
Solubility	: Water: No data available
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

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

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

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No additional information available

### 10.4. Conditions to avoid

No additional information available

### 10.5. Incompatible materials

Avoid oil, grease and all other combustible materials.

### 10.6. Hazardous decomposition products

No additional information available

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

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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 (23.5-90% Oxygen, 0.0001-76.5% Carbon Dioxide, 5-76.5% Nitrogen)

Persistence and degradability	No ecological damage caused by this product.
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#### Carbon dioxide (124-38-9)

Persistence and degradability	No ecological damage caused by this product.
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#### Oxygen (7782-44-7)

Persistence and degradability	No ecological damage caused by this product.
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#### Nitrogen (7727-37-9)

Persistence and degradability	No ecological damage caused by this product.
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### 12.3. Bioaccumulative potential

#### Gas Mixture (23.5-90% Oxygen, 0.0001-76.5% Carbon Dioxide, 5-76.5% Nitrogen)

Log Pow	Not applicable.
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Log Kow	Not applicable.
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Bioaccumulative potential	No ecological damage caused by this product.
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#### Carbon dioxide (124-38-9)

BCF fish 1	(no bioaccumulation)
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Log Pow	0.83
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Log Kow	Not applicable.
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Bioaccumulative potential	No ecological damage caused by this product.
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#### Oxygen (7782-44-7)

Log Pow	Not applicable.
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Log Kow	Not applicable.
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Bioaccumulative potential	No ecological damage caused by this product.
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#### Nitrogen (7727-37-9)

Log Pow	Not applicable for inorganic gases.
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Log Kow	Not applicable.
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Bioaccumulative potential	No ecological damage caused by this product.
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### 12.4. Mobility in soil

#### Gas Mixture (23.5-90% Oxygen, 0.0001-76.5% Carbon Dioxide, 5-76.5% Nitrogen)

Mobility in soil	No data available.
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Class (IATA) : 2

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

##### Gas Mixture (23.5-90% Oxygen, 0.0001-76.5% Carbon Dioxide, 5-76.5% Nitrogen)

SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Sudden release of pressure hazard
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All components of this product are listed on the Toxic Substances Control Act (TSCA) inventory.

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

#### 15.2. International regulations

##### CANADA

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

Listed on the Canadian DSL (Domestic Substances List)

##### Oxygen (7782-44-7)

Listed on the Canadian DSL (Domestic Substances List)

##### Nitrogen (7727-37-9)

Listed on the Canadian DSL (Domestic Substances List)

#### EU-Regulations

##### 15.2.2. National regulations

No additional information available

#### 15.3. US State regulations

##### Gas Mixture (23.5-90% Oxygen, 0.0001-76.5% Carbon Dioxide, 5-76.5% Nitrogen)()

U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

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

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
No	No	No	No	





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<b>Oxygen (7782-44-7)</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
No	No	No	No	

<b>Nitrogen (7727-37-9)</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
No	No	No	No	

<b>Carbon dioxide (124-38-9)</b>
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

<b>Oxygen (7782-44-7)</b>
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

<b>Nitrogen (7727-37-9)</b>
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

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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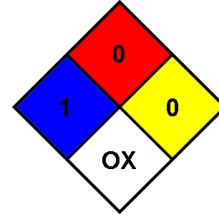
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NFPA health hazard	: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.
NFPA fire hazard	: 0 - Materials that will not burn.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.
NFPA specific hazard	: OX - This denotes an oxidizer, a chemical which can greatly increase the rate of combustion/fire.



### HMIS III Rating

Health	: 1 Slight Hazard - Irritation or minor reversible injury possible
Flammability	: 0 Minimal Hazard
Physical	: 3 Serious 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.*