

# Material Safety Data Sheet



## Carbon Dioxide/Oxygen/Inert Gas Mixture

### 1. Product and company identification

<b>Product name</b>	: Carbon Dioxide/Oxygen/Inert Gas Mixture
<b>Synonym</b>	: Not available.
<b>Trade name</b>	: Stargon, StarGold-HiDep, StarGold 31, StarGold C162, StarGold C 320, StarGold 522, StarGold ACO85,
<b>Material uses</b>	: Not available.
<b>Manufacturer</b>	: Praxair Canada Inc. 1 City Centre Drive Suite 1200 Mississauga, ON L5B 1M2
<b>MSDS #</b>	: E-6790-I
<b>Validation date</b>	: October FÍ , 201Î .
<b>Print date</b>	: October FÍ , 201Î .
<b><u>In case of emergency</u></b>	: <b>Emergencies:</b> * 1-800-363-0042 *Call emergency numbers 24 hours a day only for spills, leaks, fire, exposure, or accidents involving this product. For routine information, contact your supplier or Praxair sales representative.
<b>Product type</b>	: Gas.

### 2. Hazards identification

<b>Physical state</b>	: Gas.
<b>Odor</b>	: Odourless
<b>Emergency overview</b>	: <b>WARNING!</b> <b>HIGH PRESSURE GAS. Can cause rapid suffocation. May cause dizziness and drowsiness. Self-contained breathing apparatus may be required by rescue workers.</b>  Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode. Do not puncture or incinerate container. Avoid breathing gas. Use only with adequate ventilation.
<b>Routes of entry</b>	: Inhalation
<b><u>Potential acute health effects</u></b>	
<b>Inhalation</b>	: Asphyxiant. Effects are due to lack of oxygen. Moderate concentrations may cause headaches, drowsiness, dizziness, excitation, excess salivation, vomiting, and unconsciousness. Lack of oxygen can kill.
<b>Ingestion</b>	: As this product is a gas, refer to the inhalation section.
<b>Skin</b>	: Contact with rapidly expanding gas may cause burns or frostbite.
<b>Eyes</b>	: Contact with rapidly expanding gas may cause burns or frostbite.
<b><u>Potential chronic health effects</u></b>	
<b>Chronic effects</b>	: No known significant effects or critical hazards.
<b>Carcinogenicity</b>	: No known significant effects or critical hazards.
<b>Mutagenicity</b>	: No known significant effects or critical hazards.
<b>Teratogenicity</b>	: No known significant effects or critical hazards.
<b>Developmental effects</b>	: No known significant effects or critical hazards.
<b>Fertility effects</b>	: No known significant effects or critical hazards.
<b>Target organs</b>	: Contains materials which may cause damage to the following organs: retinal ganglion cells and Central Nervous System, (CNS)
<b><u>Over-exposure signs/symptoms</u></b>	
<b>Inhalation</b>	: No specific data.
<b>Ingestion</b>	: No specific data.

## 2. Hazards identification

- Skin** : No specific data.
- Eyes** : No specific data.
- Medical conditions aggravated by over-exposure** : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (section 11)

## 3. Composition/information on ingredients

### Canada

<u>Name</u>	<u>CAS number</u>	<u>%</u>
oxygen	7782-44-7	0.0001 - 23.4999
carbon dioxide AND CONTAINS ONE OR MORE OF THE FOLLOWING GASES:	124-38-9	0.1 - 99.98
argon	7440-37-1	0.0001 - 99.8999
helium	7440-59-7	0.0001 - 99.8999
krypton	7439-90-9	0.0001 - 99.8999
neon	7440-01-9	0.0001 - 99.8999
nitrogen	7727-37-9	0.0001 - 99.8999
xenon	7440-63-3	0.0001 - 99.8999

## 4. First aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
- Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
- Ingestion** : As this product is a gas, refer to the inhalation section.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

## 5. Fire-fighting measures

- Flammability of the product** : Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.

## 5. Fire-fighting measures

- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Special remarks on fire hazards** : Not available.
- Special remarks on explosion hazards** : Not available.

## 6. Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up**
- Small spill** : Immediately contact emergency personnel. Stop leak if without risk.
- Large spill** : Immediately contact emergency personnel. Stop leak if without risk. Note: see section 1 for emergency contact information and section 13 for waste disposal.

## 7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container.
- Protect cylinder from damage. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. 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. Open valve slowly. If valve is hard to open, discontinue use and contact your supplier. Close valve after each use; keep closed even when empty.
- Storage** : Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see section 10). Keep container tightly closed and sealed until ready for use.

### OTHER HAZARDOUS CONDITIONS OF HANDLING, STORAGE, AND USE:

**High pressure gas.** Use piping and equipment adequately designed to withstand pressures to be encountered. Gas can cause rapid suffocation due to oxygen deficiency. Store and use with adequate ventilation. Close valve after each use; keep closed even when empty. **Prevent reverse flow.** Reverse flow into cylinder may cause a rupture. Use a check valve or other protective device in any line or piping from the cylinder. **Never work on a pressured system.** If there is a leak, close the cylinder valve. Blow the system down in an environmentally safe manner in compliance with all federal, provincial, and local laws, then repair the leak. **Never place a compressed gas**



## 8. Exposure controls/personal protection

<b>Eyes</b>	: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. Select in accordance with the current CSA standard Z94.3, "Industrial Eye and Face Protection", and any provincial regulations, local bylaws or guidelines.
<b>Skin</b>	: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
<b>Environmental exposure controls</b>	: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
<b>Other protection</b>	: Metatarsal shoes for cylinder handling. Protective clothing where needed. Cuffless trousers should be worn outside the shoes. Select in accordance with the current CSA standard Z195, "Protective Foot Wear", and any provincial regulations, local bylaws or guidelines.

## 9. Physical and chemical properties

<b>Physical state</b>	: Gas.
<b>Flash point</b>	: Not available.
<b>Burning time</b>	: Not applicable.
<b>Burning rate</b>	: Not applicable.
<b>Auto-ignition temperature</b>	: Not available.
<b>Flammable limits</b>	: Not available.
<b>Color</b>	: Colourless
<b>Odor</b>	: Odourless
<b>Taste</b>	: Not available.
<b>Molecular weight</b>	: Not applicable.
<b>Molecular formula</b>	: Not applicable.
<b>pH</b>	: Not available.
<b>Boiling/condensation point</b>	: Not available.
<b>Melting/freezing point</b>	: Not available.
<b>Critical temperature</b>	: Not available.
<b>Relative density</b>	: Not available.
<b>Vapor pressure</b>	: Not available.
<b>Vapor density</b>	: Not available.
<b>Volatility</b>	: Not available.
<b>Odor threshold</b>	: Not available.
<b>Evaporation rate</b>	: Not available.
<b>Viscosity</b>	: Not available.
<b>Ionicity (in water)</b>	: Not available.
<b>Dispersibility properties</b>	: Not available.
<b>Solubility</b>	: Not available.
<b>Physical/chemical properties comments</b>	: Not available.
<b>COEFFICIENT OF WATER/OIL DISTRIBUTION:</b>	: Not available.





## 15. Regulatory information

- United States inventory (TSCA 8b)** : All components are listed or exempted.
- WHMIS (Canada)** : Class A: Compressed gas.
- Canadian lists** : **CEPA Toxic substances**: The following components are listed: Carbon dioxide  
**Canadian ARET**: None of the components are listed.  
**Canadian NPRI**: None of the components are listed.  
**Alberta Designated Substances**: None of the components are listed.  
**Ontario Designated Substances**: None of the components are listed.  
**Quebec Designated Substances**: None of the components are listed.
- Canada inventory** : All components are listed or exempted.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

### International regulations

- International lists** : **Australia inventory (AICS)**: All components are listed or exempted.  
**China inventory (IECSC)**: All components are listed or exempted.  
**Japan inventory**: Not determined.  
**Korea inventory**: All components are listed or exempted.  
**New Zealand Inventory of Chemicals (NZIoC)**: Not determined.  
**Philippines inventory (PICCS)**: All components are listed or exempted.
- Chemical Weapons Convention List Schedule I Chemicals** : Not listed
- Chemical Weapons Convention List Schedule II Chemicals** : Not listed
- Chemical Weapons Convention List Schedule III Chemicals** : Not listed

## 16. Other information

- Label requirements** : HIGH PRESSURE GAS. Can cause rapid suffocation. May cause dizziness and drowsiness. Self-contained breathing apparatus may be required by rescue workers.

**Hazardous Material Information System (U.S.A.)** :

Health	0
Flammability	0
Physical hazards	2

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

- References** : Not available.
- Other special considerations** : Not available.
- Date of printing** : %I/%S/201\*.
- Date of issue** : 15/F€/2011
- Date of previous issue** : No previous validation.
- Version** : 0.01



## 16. Other information

✔ Indicates information that has changed from previously issued version.

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

### STANDARD VALVE CONNECTIONS FOR U.S. AND CANADA:

**THREADED:** Not Applicable

**PIN-INDEXED YOKE:** Not applicable.

**ULTRA-HIGH-  
INTEGRITY**

**CONNECTION:**

Use the proper CGA connections. **DO NOT USE ADAPTERS.** Additional limited-standard connections may apply. See CGA pamphlets V-1 and V-7 listed below.

Ask your supplier about free Praxair safety literature as referred to in this MSDS and on the label for this product. Further information about this product can be found in the following pamphlets published by the Compressed Gas Association, Inc. (CGA), 4221 Walney Road, 5th Floor, Chantilly, VA 20151-2923, Telephone (703) 788-2700, Fax (703) 961-1831, website: www.cganet.com.

### MIXTURES:

When two or more gases, or liquefied gases are mixed, their hazardous properties may combine to 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 make your safety evaluation of the end product. Remember, gases and liquids have properties which can cause serious injury or death.

**For more in-depth information for each component, refer to the pure product MSDS.**

***The information contained in this MSDS is generated from technical sources using the Chemmate Mixture MSDS system and the pure-product MSDS for each component. These mixtures are not tested as a whole for chemical, physical, or health effects.***

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

Praxair Canada Inc. requests the users of this product to study this Material Data Sheet (MSDS) and become aware of product hazards and safety information. To promote safe use of this product, a user should (1) notify its employees, agents and contractors of the information on this MSDS and any product hazards and safety information, (2) furnish this same information to each of its customers for the product, and (3) request such customers to notify their employees and customers for the product of the same product hazards and safety information.

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