



Issue date March 1, 2015

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## Safety Data Sheet

**SDS ID# 2030**

### Section 1. IDENTIFICATION

#### 1.1. Product identifier

Product form : Mixture

Product name : Carbon Dioxide (0.0001%-99%) in Nitrogen

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

Product use : Calibration gas/Bumptest gas/Function test gas

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

Intermountain Specialty Gases

520 N. Kings Road

Nampa, ID 83687

Telephone 1-208-466-9425 or Toll free 1-800-552-5003

Fax 1-208-466-9144

www.isgases.com

#### 1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300

### Section 2. HAZARDS IDENTIFICATION

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

Classification GASES UNDER PRESSURE - Compressed gas

#### 2.2. Label elements

##### Hazard pictograms



Signal word : WARNING

Hazard statements : H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED  
: OSHA-H01 - MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION.  
: CGA-HG03 - MAY INCREASE RESPIRATION AND HEART RATE

##### Precautionary statements

[General] : Read and follow all Safety Data Sheets (SDS's) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have a product container or label at hand.



Use equipment rated for cylinder pressure.

- [Prevention] : P202 - Do not handle until all safety precautions have been read and understood  
: P271+P403- Use only outdoors or in a well-ventilated area
- [Response] : IF INHALED - Remove person to fresh air and keep comfortable for breathing. Get medical attention, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- [Storage] : CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F)
- [Disposal] : Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

**2.3. Other hazards**

No additional information available

**2.4. Unknown acute toxicity**

No data available

**Section 3. COMPOSITION/INFORMATION ON INGREDIENTS**

**3.1. Substance**

Not applicable

**3.2. Mixture**

Name	Product Identifier	%
Nitrogen	(CAS No) 7727-37-9	15.0001 - 0.0001
Carbon Dioxide	(CAS No) 124-38-9	0.0001 - 84.9999

**Section 4. FIRST AID MEASURES**

**4.1. Description of first aid measures**

- General : IF exposed or concerned: Get medical advice/attention.
- Inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing has stopped, give artificial respiration or oxygen by trained personnel. If victim feels unwell, seek medical advice.
- Skin contact : Adverse effects not expected from this product.
- Eye contact : Adverse effects not expected from this product.
- Ingestion : Ingestion is not considered a potential route of exposure, refer to the inhalation section.

**4.2. Most important symptoms and effects**

**Acute**



Inhalation	: May displace oxygen and cause rapid suffocation.
Skin contact	: Contact with rapidly expanding gas may cause burns or frostbite.
Eye contact	: Contact with rapidly expanding gas may cause burns or frostbite.
Ingestion	: Ingestion is not considered a potential route of exposure, refer to the inhalation section.
Frostbite	: Thaw frosted parts with lukewarm water. Do not rub affected areas. Get immediate medical advice/attention.
Symptoms/injuries upon intravenous administration	: Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness, cessation of breathing.
Chronic symptoms	: Adverse effects not expected from this product.
Delayed	: Adverse effects not expected from this product.

**4.3. Indication of any immediate medical attention and special treatment needed**

If victim feels unwell, seek medical advice. If breathing is difficult, give artificial respiration or oxygen by trained personnel.

**Section 5. FIREFIGHTING MEASURES**

**5.1. Extinguishing media**

Suitable extinguishing media	: Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	: None known

**5.2. Special hazards arising from the substance or mixture**

Fire hazard	: The product is not flammable
Explosion hazard	: Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.
Reactivity	: None known.

**5.3. Advice for fire-fighters**

Firefighting instructions	: In case of fire: Evacuate all personnel from the danger area. Stop the leak and flow of gas before extinguishing fire, if safe to do so. If this is not possible, withdraw from area and allow fire to burn. Fight fire remotely due to the risk of explosion. Use water spray or fog for cooling exposed containers. Let the fire burn. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Exercise caution when fighting any chemical fire.
Protection during firefighting	: Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus, SCBA) for fire fighters. Do not enter fire area without proper protective equipment, including respiratory protection.

**Section 6. ACCIDENTAL RELEASE MEASURES**

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

General measures	: Ensure adequate ventilation.
<b>6.1.1. For non-emergency personnel</b>	
Protective equipment	: Wear protective equipment consistent with the site emergency plan.
Emergency procedures	: Escape the danger area by the closest safe route. Close doors and windows of adjacent premises. Keep containers closed. Mark the danger area. Seal off low-lying



areas. Keep upwind.

**6.1.12. For emergency responders**

Protective equipment : Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus, SCBA) for fire fighters. Equip cleanup crew with proper protection.

Emergency procedures : Evacuate and limit access. Ventilate area. See information above "For non-emergency personnel".

**6.2. Methods and material for containment and cleaning up**

For containment : Immediately contact emergency personnel. Try to stop gas leak if safe to do so.

Methods for cleaning up : Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

**Section 7. HANDLING AND STORAGE**

**7.1. Precautions for safe handling**

Precautions for safety handling : Pressurized container: Do not pierce or burn, even after use. Use equipment rated for cylinder pressure. Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Protect cylinders from physical damage; do not drag, roll, slide, or drop.

Hygiene measures : Do not eat, drink or smoke when using this product.

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

Technical measures : None known.

Storage conditions : Do not expose to temperatures exceeding 52°C (125°F). Store locked up. Keep containers closed when not in use. Protect cylinder from physical damage. Store in well ventilated area.

Incompatible products : None known.

Incompatible materials : Certain reactive metals, hydrides, moist cesium monoxide, or lithium acetylene carbide diammino may ignite. Passing carbon dioxide over a mixture of sodium peroxide and aluminum or magnesium may explode.

**Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Nitrogen (7727-37-9)				
OSHA PEL		Cal/OSHA PEL	NIOSH REL	ACGIH 2015 TLV
		(as of 4/26/13)	(as of 4/26/13)	
ppm	mg/m <sup>3</sup>	8-hour TWA (ST) STEL ( C ) Ceiling	up to 10-hour TWA (ST) STEL ( C ) Ceiling	8-hour TWA (ST) STEL ( C ) Ceiling
<i>There are no specific exposure limits for Nitrogen. Nitrogen is a simple asphyxiant (SA). Oxygen levels should be maintained above 19.5%.</i>				Simple asphyxiant

Carbon Dioxide (124-38-9)				
OSHA PEL		Cal/OSHA PEL	NIOSH REL	ACGIH 2015 TLV
		(as of 4/26/13)	(as of 4/26/13)	



ppm	mg/m <sup>3</sup>	8-hour TWA (ST) STEL ( C ) Ceiling	up to 10-hour TWA (ST) STEL ( C ) Ceiling (IDLH) Immediately Dangerous to Life or Health	8-hour TWA (ST) STEL ( C ) Ceiling
5,000 ppm	9,000 mg/m <sup>3</sup>	5,000 ppm	5,000 ppm	5,000 ppm
		(ST) 30,000 ppm	(ST) 30,000 ppm	(ST) 30,000 ppm
			(IDLH) 40,000 ppm	

**8.2. Appropriate engineering controls**

Engineering measures/controls : Provide adequate general and local exhaust ventilation. Systems under pressure should be regularly check for leakages. Ensure exposure is below occupational exposure limits. Oxygen detectors should be used when asphyxiating gases may me released. Consider work permit system e.g. for maintenance activities.

**8.3. Individual protection measures**

Hand protection : Wear working gloves when handling gas containers. 29CFR 1910.138: Hand Protection.  
 Eye protection : Wear safety glasses with side shields. 29 CFR 1910.133: Eye and Face Protection.  
 Skin and body protection : Wear suitable protective clothing, e.g.-Lab coats, coveralls or flame resistant clothing.  
 Respiratory protection : None necessary during normal and routine operations. See sections 5&6.  
 Thermal hazard protection : None necessary during normal and routine operations.  
 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. 29 CFR 1910.136: Foot Protection

**Section 9. PHYSICAL AND CHEMICAL PROPERTIES**

**9.1. Exposure controls**

Appearance : Clear, colorless gas.  
 Physical state : Gas  
 Color : Colorless  
 Odor : No data available  
 Odor threshold : No data available  
 pH : No data available  
 Melting point : Not applicable for gas-mixtures.  
 Freezing point : No data available  
 Flash point : No data available  
 Evaporation rate : No data available  
 Flammability (solid, gas) : Not Flammable - not combustible  
 Upper flammability : Not Flammable - not combustible  
 Lower flammability : Not Flammable - not combustible  
 Relative density : No data available  
 Solubility : No data available  
 Partition coefficient : No data available  
 Auto-ignition temperature : No data available



Decomposition temperature : No data available  
 Viscosity : Not applicable

	Carbon Dioxide	Nitrogen			
Molecular weight (grams)	44.01	28.013			
Boiling point	-78.5 °C	-196 °C			
Vapor pressure	838 psig (5778 kPa) @ 21.1 °C	Above critical temperature			
Vapor density at 20°C	1.522	0.97			
Relative gas density	1.839	1.153			
Critical Temperature	31.1 °C	-146.9 °C			

**Section 10. STABILITY AND REACTIVITY**

**10.1. Reactivity**

No reactivity hazard other than the effects described below.

**10.2. Chemical stability**

Stable under normal conditions.

**10.3. Possibility of hazardous reactions**

No additional information available.

**10.4. Conditions to avoid**

Due to the presence of Carbon dioxide, Carbonic acid is formed in the presence of moisture.

**10.5. Incompatible materials**

Carbon dioxide is incompatible with: Certain reactive metals, hydrides, moist cesium monoxide, or lithium acetylene carbide diammino may ignite. Passing carbon dioxide over a mixture of sodium peroxide and aluminum or magnesium may explode.

**10.6. Hazardous decomposition products**

Oxygen. Carbon monoxide (CO)

**Section 11. TOXICOLOGICAL INFORMATION**

**Acute toxicity**

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

LC50 inhalation rat (ppm) 410,000 ppm/4h

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

LC50 inhalation rat (ppm) 470,000 ppm/4h

**11.1. Information on routes of exposure**

Inhalation : Acidosis, adrenal cortical exhaustion, and other metabolic stresses have resulted from prolonged continuous exposure to 1-2% carbon dioxide (10,000 ppm-20,000 ppm). The ACGIH TLV of 5,000 ppm is expected to provide a good margin of safety from asphyxiation and undue metabolic stress provided sufficient oxygen levels are



maintained in the air. Increased physical activity, duration of exposure, and decreased oxygen content can affect systemic and respiratory effects resulting from exposure to [carbon dioxide](#).

- Skin contact : Adverse effects not expected from this product
- Eye contact : Adverse effects not expected from this product
- Ingestion : Ingestion is not considered a potential route of exposure, see "Inhalation" above
- Intravenous administration : Not known

**11.2. Symptoms related to physical, chemical and toxicological characteristics**

**Symptoms** Simple asphyxiant. May cause suffocation by displacing the oxygen in the air. Exposure to oxygen-deficient atmosphere (<=18%) may cause dizziness, drowsiness, nausea, vomiting, excess salivation, diminished mental alertness, loss of consciousness and death. Exposure to atmospheres containing 8-10% or less oxygen will bring about unconsciousness without warning and so quickly that the individuals cannot help or protect themselves. Lack of sufficient oxygen may cause serious injury or death. Depending on concentration and duration of exposure to carbon dioxide may cause increased respirations, headache, mild narcotic effects, increased blood pressure and pulse, and asphyxiation. Symptoms of overexposure become more apparent when atmospheric oxygen is decreased to 15-17%.

**11.3. Delayed and immediate effects**

- Skin corrosion/irritation : Contact with rapidly expanding gas may cause burns or frostbite.
- Serious eye damage/irritation : Contact with rapidly expanding gas may cause burns or frostbite.
- 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) : Respiratory system, Central vascular system (CVS)
- Aspiration hazard : Not classified  
Not applicable for gases and gas-mixtures

**11.4. Carcinogenic effects**

The components of this material are not found on the following lists: FEDERAL OSHA Z LIST, NTP AND IARC; therefore, they are not considered to be, nor suspected to be, cancer-causing agents by these agencies.

**Section 12. ECOLOGICAL INFORMATION**

**12.1. Aquatic Toxicity**

- Ecology - general : No ecological damage caused by this product

**12.2. Persistence and degradability**







**Nitrogen (007727-37-9)**

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

**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

**Section 16. OTHER INFORMATION**

**Date of issue/Date of revision** : New SDS 3/1/2015  
**Revision Note** : Initial release

**Hazardous Material Information System (USA)**

**Hazard Scale** : 0 = Minimal/ 1 = Slight/ 2 = Moderate/ 3 = Serious/ 4 = Severe  
**Health** : 1  
**Fire** : 0  
**Physical hazards** : 3

**Key/Legend**

SARA	Superfund Amendments and Reauthorization Act
OSHA	Occupational Safety and Health Administration
DOT	Department of Transportation
TSCA	Toxic Substance Control Act
NTP	National Toxicology Program
ACGIH	American Conference of Governmental Industrial Hygienists
PEL	Permissible Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TDG	Transportation of Dangerous Goods
CAS	Chemical Abstracts Service
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
TWA	Time Weighted Average
Prop	Proposition
ATE	Acute Toxicity Estimate

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