## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier
- **Product form**: Mixture
- **Product name**: Carbon Dioxide (0.0001% - 2.99%) in Air
- **Product code**: SG-2002-01267

### 1.2. Relevant identified uses of the substance or mixture and uses advised against
- **Use of the substance/mixture**: Test gas/Calibration gas.

### 1.3. Details of the supplier of the safety data sheet
- **Supplier**: Air Liquide
- **Address**: 2700 Post Oak Boulevard, Houston, TX 77056 - USA
- **Phone**: T 1-800-819-1704
- **Website**: www.us.airliquide.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 (GHS-US)**
- **Compressed gas**: H280
- Full text of H-phrases: see section 16

### 2.2. Label elements

**GHS-US labeling**
- **Hazard pictograms (GHS-US)**: GHS04
- **Signal word (GHS-US)**: Warning
- **Hazard statements (GHS-US)**:
  - H280 - Contains gas under pressure; may explode if heated
- **Precautionary statements (GHS-US)**:
  - P202 - Do not handle until all safety precautions have been read and understood
  - CGA-HG24 - Supports combustion.
  - P271 - Use only outdoors or in a well-ventilated area
  - P280 - Wear eye protection, face protection, protective gloves, protective clothing
  - P403 - Store in a well-ventilated place
  - P501 - Dispose of contents/container in accordance with local/regional/national/international regulations
  - CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F)
  - CGA-PG05 - Use a back flow preventive device in the piping
  - CGA-PG06 - Close valve after each use and when empty
  - CGA-PG10 - Use only with equipment rated for cylinder pressure
  - CGA-PG14 - Approach suspected leak area with caution
  - CGA-PG21 - Open valve slowly

### 2.3. Other hazards

- No additional information available

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

- Not applicable

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

- Not applicable

### 3.2. Mixture

- Not applicable
Carbon Dioxide (0.0001% - 2.99%) in Air
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressed air</td>
<td>(CAS No) 132259-10-0</td>
<td>97.01 - 99.9999</td>
<td>Compressed gas, H280</td>
</tr>
<tr>
<td>Carbon dioxide</td>
<td>(CAS No) 124-38-9</td>
<td>0.0001 - 2.99</td>
<td>Liquefied gas, H280</td>
</tr>
</tbody>
</table>

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Adverse effects not expected from this product.
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.
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

Symptoms/injuries after inhalation : Adverse effects not expected from this product.
Symptoms/injuries after skin contact : Adverse effects not expected from this product.
Symptoms/injuries after eye contact : Adverse effects not expected from this product.
Symptoms/injuries after ingestion : Ingestion is not considered a potential route of exposure.
Symptoms/injuries upon intravenous administration : Not known.

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

If you feel unwell, seek medical advice. If breathing is difficult, give oxygen.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.
 Unsuitable extinguishing media : Do not use water jet to extinguish.

5.2. Special hazards arising from the substance or mixture

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

5.3. Advice for firefighters

Firefighting instructions : In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire.
Protection during firefighting : Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus) 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.

6.1.1. For non-emergency personnel

Protective equipment : Wear protective equipment consistent with the site emergency plan.

6.1.2. For emergency responders

Protective equipment : Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus) for fire fighters. Equip cleanup crew with proper protection.
Emergency procedures : Evacuate and limit access. Ventilate area.

6.2. Environmental precautions

Try to stop release if safe to do so.

6.3. Methods and material for containment and cleaning up

For containment : Try to stop release if safe to do so.
Methods for cleaning up: Dispose of this material and its container in accordance with local regulations.

6.4. Reference to other sections
See also Sections 8 and 13.

SECTION 7: Handling and storage
7.1. Precautions for safe handling
Additional hazards when processed: Pressurized container: Do not pierce or burn, even after use. Use equipment rated for cylinder pressure. Close valve after each use and when empty.
Precautions for safe handling: Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area.
Hygiene measures: Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities
Technical measures: Comply with applicable regulations.
Storage conditions: Do not expose to temperatures exceeding 52°C (125°F). Keep container closed when not in use. Protect cylinder from physical damage. Store in well ventilated area.
Incompatible products: None known.
Incompatible materials: Flammable materials.

7.3. Specific end use(s)
See Section 1.2.

SECTION 8: Exposure controls/personal protection
8.1. Control parameters
<table>
<thead>
<tr>
<th>Carbon Dioxide (0.0001% - 2.99%) in Air</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>OSHA</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Carbon dioxide (124-38-9)</td>
<td></td>
</tr>
<tr>
<td>ACGIH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>OSHA</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

8.2. Exposure controls
Appropriate engineering controls: Ensure exposure is below occupational exposure limits. Provide adequate general and local exhaust ventilation. Systems under pressure should be regularly checked for leakages. Consider work permit system e.g. for maintenance activities.
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.

SECTION 9: Physical and chemical properties
9.1. Information on basic physical and chemical properties
Physical state: Gas
Appearance: Clear, colorless gas.
Molecular mass: Not applicable for gas-mixtures.
Color: Colorless
Carbon Dioxide (0.0001% - 2.99%) in Air

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No Data Available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>See Section 2.1 and 2.2</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative gas density</td>
<td>Similar to air</td>
</tr>
<tr>
<td>Solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Kow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not applicable - not flammable.</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>Supports combustion.</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>Not applicable - not flammable</td>
</tr>
</tbody>
</table>

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

None known.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Can form explosive mixtures with flammable materials.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Flammable materials.

10.6. Hazardous decomposition products

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

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50 inhalation rat (ppm)</th>
<th>ATE US (gases)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon dioxide (124-38-9)</td>
<td>820000 ppm/4h</td>
<td>820000.000 ppmV/4h</td>
</tr>
<tr>
<td>Compressed air (132259-10-0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50 inhalation rat (ppm)</td>
<td>820000 ppm/4h</td>
<td></td>
</tr>
<tr>
<td>ATE US (gases)</td>
<td></td>
<td>820000.000 ppmV/4h</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

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
Symptoms/injuries after inhalation: Adverse effects not expected from this product.
Symptoms/injuries after skin contact: Adverse effects not expected from this product.
Symptoms/injuries after eye contact: Adverse effects not expected from this product.
Symptoms/injuries after ingestion: Ingestion is not considered a potential route of exposure.
Symptoms/injuries upon intravenous administration: Not known.
Chronic symptoms: Adverse effects not expected from this product.

SECTION 12: Ecological information

12.1. Toxicity
No additional information available

12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Substance</th>
<th>Persistence and degradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon dioxide (124-38-9)</td>
<td>No ecological damage caused by this product.</td>
</tr>
<tr>
<td>Compressed air (132259-10-0)</td>
<td>No ecological damage caused by this product.</td>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Substance</th>
<th>Bioaccumulative potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon dioxide (124-38-9)</td>
<td>(no bioaccumulation)</td>
</tr>
<tr>
<td>Log Pow</td>
<td>0.83</td>
</tr>
<tr>
<td>BCF fish 1</td>
<td></td>
</tr>
<tr>
<td>Compressed air (132259-10-0)</td>
<td>No ecological damage caused by this product.</td>
</tr>
<tr>
<td>Log Pow</td>
<td>Not applicable for inorganic gases.</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td></td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

<table>
<thead>
<tr>
<th>Substance</th>
<th>Ecology - soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon dioxide (124-38-9)</td>
<td>No ecological damage caused by this product.</td>
</tr>
<tr>
<td>Compressed air (132259-10-0)</td>
<td>No ecological damage caused by this product.</td>
</tr>
</tbody>
</table>

12.5. Other adverse effects

<table>
<thead>
<tr>
<th>Effect</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effect on ozone layer</td>
<td>No known effects from this product.</td>
</tr>
<tr>
<td>Effect on the global warming</td>
<td>Contains greenhouse gas(es) not covered by 842/2006/EC.</td>
</tr>
</tbody>
</table>

SECTION 13: Disposal considerations

13.1. Waste treatment methods

<table>
<thead>
<tr>
<th>Waste treatment methods</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact supplier if guidance is required. Do not discharge into any place where its accumulation could be dangerous. Ensure that the emission levels from local regulations or operating permits are not exceeded.</td>
<td></td>
</tr>
</tbody>
</table>

13.2. Waste disposal recommendations

<table>
<thead>
<tr>
<th>Waste disposal recommendations</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refer to the CGA Pamphlet P-63 &quot;Disposal of Gases&quot; available at <a href="http://www.cganet.com">www.cganet.com</a> for more guidance on suitable disposal methods.</td>
<td></td>
</tr>
</tbody>
</table>

Ecology - waste materials: None known.
## SECTION 14: Transport information

In accordance with DOT

<table>
<thead>
<tr>
<th>Description</th>
<th>Code/Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport document description</td>
<td>UN1956 Compressed gas, n.o.s. (Air, Carbon dioxide)</td>
</tr>
<tr>
<td>UN-No.(DOT)</td>
<td>UN1956</td>
</tr>
<tr>
<td>Proper Shipping Name (DOT)</td>
<td>Compressed gas, n.o.s.</td>
</tr>
<tr>
<td>Hazard labels (DOT)</td>
<td>2.2 - Non-flammable gas</td>
</tr>
</tbody>
</table>

**DOT Symbols**

- G - Identifies PSN requiring a technical name

**DOT Packaging Exceptions (49 CFR 173.xxx)**

- 306;307
- 302;305
- 314;315
- 75 kg
- 150 kg

**DOT Vessel Stowage Location**

- A - The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel.

### Additional information

**Other information**

- No supplementary information available.

### ADR

**Transport document description**

- UN 1956, 2.2, (E)

**Class (ADR)**

- 2 - Gases

**Hazard identification number (Kemler No.)**

- 20

**Classification code (ADR)**

- 1A

**Hazard labels (ADR)**

- 2.2 - Non-flammable compressed gas

**Orange plates**

- 20
- 1956

**Tunnel restriction code (ADR)**

- E

**LQ**

- 120ml

**Excepted quantities (ADR)**

- E1

### Transport by sea

**UN-No. (IMDG)**

- 1956

**Proper Shipping Name (IMDG)**

- COMPRESSED GAS, N.O.S.

**Class (IMDG)**

- 2 - Gases

### Air transport

**UN-No.(IATA)**

- 1956

**Proper Shipping Name (IATA)**

- COMPRESSED GAS, N.O.S.

**Class (IATA)**

- 2
SECTION 15: Regulatory information

15.1. US Federal regulations

Carbon dioxide (124-38-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

Carbon dioxide (124-38-9)
Listed on the Canadian DSL (Domestic Substances List)
WHMIS Classification: Class A - Compressed Gas

Compressed air (132259-10-0)
WHMIS Classification: Class A - Compressed Gas

EU-Regulations

Carbon dioxide (124-38-9)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Classification according to Regulation (EC) No. 1272/2008 [CLP]
Not classified

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

15.2.2. National regulations

Carbon dioxide (124-38-9)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
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)
Listed on the Canadian IDL (Ingredient Disclosure List)

Compressed air (132259-10-0)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)

15.3. US State regulations

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

Indication of changes
Revised safety data sheet in accordance with OSHA final rule on GHS implementation promulgated March 26, 2012.

Other information
This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this product.

Full text of H-phrases:

| Compressed gas | Gases under pressure Compressed gas |
| Liquefied gas | Gases under pressure Liquefied gas |
| H280         | Contains gas under pressure; may explode if heated |

SDS US (GHS HazCom2012)

This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this product. To the best of Air Liquide America Corporation’s knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this product is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.