

## Section 1: Product and Company Identification

**Absolute Accuracy**  
4591 S Wayside Dr  
Houston, TX 77087  
(832) 571-2387

Product Code: 1193

**Synonyms:** N/A  
**Recommended Use:** CALIBRATION GAS  
**Usage Restrictions:** INDUSTRIAL CALIBRATION GASS

## Section 2: Hazards Identification



### Warning

**Hazard Classification:**

Gases Under Pressure

**Hazard Statements:**

Contains gas under pressure; may explode if heated

**Precautionary Statements**

**Storage:**

Protect from sunlight.  
Store in well-ventilated place.

## Section 3: Composition/Information on Ingredients

|                       | CAS #     | Concentration |
|-----------------------|-----------|---------------|
| <b>Carbon Dioxide</b> | 124-38-9  | 25 PPM        |
| <b>Nitrogen</b>       | 7727-37-9 | balance       |

|  | Chemical Substance | Chemical Family | Trade Names |
|--|--------------------|-----------------|-------------|
|--|--------------------|-----------------|-------------|

|                 | <b>Chemical Substance</b> | <b>Chemical Family</b> | <b>Trade Names</b>  |
|-----------------|---------------------------|------------------------|---|
| <b>Nitrogen</b> | NITROGEN, COMPRESSED GAS  | Inorganic gases        | DIATOMIC NITROGEN; DINITROGEN; NITROGEN; NITROGEN-14; NITROGEN GAS; UN 1066; N2 |

## Section 4: First Aid Measures

|                       | <b>Skin Contact</b>  | <b>Eye Contact</b>  | <b>Ingestion</b>                                       | <b>Inhalation</b>  | <b>Note to Physicians</b>        |
|-----------------------|--|---|--|--|----------------------------------|
| <b>Carbon Dioxide</b> | If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention. | Contact with liquid: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention. | Do not induce vomiting.                                | If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention. | For inhalation, consider oxygen. |
| <b>Nitrogen</b>       | Wash exposed skin with soap and water.   | Flush eyes with plenty of water.  | If a large amount is swallowed, get medical attention. | If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention. | For inhalation, consider oxygen. |

## Section 5: Fire Fighting Measures

|                       | <b>Suitable Extinguishing Media</b>  | <b>Products of Combustion</b> | <b>Protection of Firefighters</b>   |
|-----------------------|--|-------------------------------|---|
| <b>Carbon Dioxide</b> | Non-flammable  | Non-flammable                 | <ul style="list-style-type: none"> <li>Any appropriate escape-type, self-contained breathing apparatus.</li> <li>Non-flammable</li> </ul> |
| <b>Nitrogen</b>       | Non-flammable. Use suitable extinguishing media for surrounding fire. Cylinders may rupture or explode if exposed to heat. | Non-flammable                 | <ul style="list-style-type: none"> <li>Respiratory protection may be needed for frequent or heavy exposure.</li> </ul>                    |

## Section 6: Accidental Release Measures

|                       | <b>Personal Precautions</b>   | <b>Environmental Precautions</b>   | <b>Methods for Containment</b>               |
|-----------------------|---|--|--|
| <b>Carbon Dioxide</b> | Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering. Do not touch spilled material. | Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers. | Stop leak if possible without personal risk. |
| <b>Nitrogen</b>       | Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.                                  | No significant effects from contamination expected.  | Stop leak if possible without personal risk. |

|                       | <b>Methods for Cleanup</b>                      | <b>Other Information</b> |
|-----------------------|---|--------------------------|
| <b>Carbon Dioxide</b> | Stop leak, evacuate, remove source of ignition. | None                     |
| <b>Nitrogen</b>       | N/A   | N/A                      |

## Section 7: Handling and Storage

|                       | Handling  | Storage   |
|-----------------------|---|---|
| <b>Carbon Dioxide</b> | Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances.                               | Store and handle in accordance with all current regulations and standards |
| <b>Nitrogen</b>       | Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. | Keep separated from incompatible substances.                              |

## Section 8: Exposure Controls/Personal Protection

|                       | Exposure Guidelines   |
|-----------------------|---|
| <b>Carbon Dioxide</b> | CARBON DIOXIDE, GAS: CARBON DIOXIDE: 5000 ppm (9000 mg/m <sup>3</sup> ) OSHA TWA 10000 ppm (18000 mg/m <sup>3</sup> ) OSHA TWA (vacated by 58 FR 35338, June 30, 1993) 30000 ppm (54000 mg/m <sup>3</sup> ) OSHA STEL (vacated by 58 FR 35338, June 30, 1993) 5000 ppm ACGIH TWA 30000 ppm ACGIH STEL 5000 ppm (9000 mg/m <sup>3</sup> ) NIOSH recommended TWA 10 hour(s) 30000 ppm (54000 mg/m <sup>3</sup> ) NIOSH recommended STEL |
| <b>Nitrogen</b>       | NITROGEN, COMPRESSED GAS: NITROGEN: ACGIH (simple asphyxiant)   |

### Engineering Controls

Handle only in fully enclosed systems.

|                       | Eye Protection   | Skin Protection  | Respiratory Protection   |
|-----------------------|--|--|--|
| <b>Carbon Dioxide</b> | For the gas: Eye protection not required, but recommended. For the liquid: Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area. | For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing. | Any appropriate escape-type, self-contained breathing apparatus.     |
| <b>Nitrogen</b>       | Eye protection not required, but recommended.  | Protective clothing is not required.   | Respiratory protection may be needed for frequent or heavy exposure. |

### General Hygiene considerations

- Avoid breathing vapor or mist
- Avoid contact with eyes and skin
- Wash thoroughly after handling and before eating or drinking

## Section 9: Physical and Chemical Properties

|                       | Physical State | Appearance | Color     | Change in Appearance | Physical Form | Odor     | Taste      |
|-----------------------|----------------|------------|-----------|----------------------|---------------|----------|------------|
| <b>Carbon Dioxide</b> | Gas            | Colorless  | Colorless | N/A                  | Gas           | Odorless | Acid taste |
| <b>Nitrogen</b>       | Gas            | Clear      | Colorless | N/A                  | Gas           | Odorless | Tasteless  |

|                       | Flash Point   | Flammability  | Partition Coefficient | Autoignition Temperature | Upper Explosive Limits | Lower Explosive Limits |
|-----------------------|---------------|---------------|-----------------------|--------------------------|------------------------|------------------------|
| <b>Carbon Dioxide</b> | Not flammable | Not available | N/A                   | Nonflammable             | Nonflammable           | Nonflammable           |

|                 | Flash Point   | Flammability  | Partition Coefficient | Autoignition Temperature | Upper Explosive Limits | Lower Explosive Limits |
|-----------------|---------------|---------------|-----------------------|--------------------------|------------------------|------------------------|
| <b>Nitrogen</b> | Not flammable | Not available | Not available         | Nonflammable             | Nonflammable           | Nonflammable           |

|                       | Boiling Point   | Freezing Point            | Vapor Pressure    | Vapor Density | Specific Gravity | Water Solubility | pH   | Odor Threshold | Evaporation Rate | Viscosity         |
|-----------------------|-----------------|---------------------------|-------------------|---------------|------------------|------------------|--|----------------|------------------|-------------------|
| <b>Carbon Dioxide</b> | Not available   | -71 F (-57 C) @ 4000 mmHg | 43700 mmHg @ 21 C | 1.5 (Air=1)   | 1.522 @ 21 C     | Soluble          | 3.7 (saturated aqueous solution) @ 101.3 kPa (carbonic acid) | Not available  | Not applicable   | 0.01657 cP @ 0 C  |
| <b>Nitrogen</b>       | -321 F (-196 C) | -346 F (-210 C)           | 760 mmHg @ -196 C | 0.967 (Air=1) | Not applicable   | 1.6% @ 20 C      | Not applicable   | Not available  | Not applicable   | 0.01787 cP @ 27 C |

|                       | Molecular Weight | Molecular Formula | Density    | Weight per Gallon | Volatility by Volume | Volatility     | Solvent Solubility  |
|-----------------------|------------------|-------------------|------------|-------------------|----------------------|----------------|---|
| <b>Carbon Dioxide</b> | 44.01            | C-O2              | 0.114      | Not available     | Not applicable       | Not applicable | Soluble: Alcohol, acetone, hydrocarbons, organic solvents |
| <b>Nitrogen</b>       | 28.0134          | N2                | 1.2506 g/L | Not available     | 100%                 | 1              | Soluble: Liquid ammonia                                   |

## Section 10: Stability and Reactivity

|                       | Stability                                   | Conditions to Avoid                         | Incompatible Materials   |
|-----------------------|---|---|--|
| <b>Carbon Dioxide</b> | Stable at normal temperatures and pressure. | Stable at normal temperatures and pressure. | Combustible materials, oxidizing materials, metal salts, reducing agents, metal carbide, metals, bases |
| <b>Nitrogen</b>       | Stable at normal temperatures and pressure. | Stable at normal temperatures and pressure. | Metals, oxidizing materials  |

|                       | Hazardous Decomposition Products | Possibility of Hazardous Reactions |
|-----------------------|----------------------------------|------------------------------------|
| <b>Carbon Dioxide</b> | Carbon monoxide                  | Will not polymerize.               |
| <b>Nitrogen</b>       | Oxides of nitrogen               | Will not polymerize.               |

## Section 11: Toxicology Information

### Acute Effects

|                       | Oral LD50       | Dermal LD50     | Inhalation  |
|-----------------------|-----------------|-----------------|---|
| <b>Carbon Dioxide</b> | Not established | Not established | Ringin in the ears, nausea, irregular heartbeat, headache, drowsiness, dizziness, tingling sensation, visual disturbances, suffocation, convulsions, coma |
| <b>Nitrogen</b>       | Not available   | Not available   | Nausea, vomiting, difficulty breathing, headache, drowsiness, dizziness, tingling sensation, loss of coordination, convulsions, coma                      |

|                       | Eye Irritation  | Skin Irritation                               | Sensitization        |
|-----------------------|---|---|----------------------|
| <b>Carbon Dioxide</b> | Irritation, frostbite, blurred vision                           | Liquid: blisters, frostbite                   | Difficulty breathing |
| <b>Nitrogen</b>       | Contact with rapidly expanding gas may cause burns or frostbite | No information on significant adverse effects | Difficulty breathing |

### Chronic Effects

|                       | <b>Carcinogenicity</b> | <b>Mutagenicity</b> | <b>Reproductive Effects</b> | <b>Developmental Effects</b> |
|-----------------------|------------------------|---------------------|-----------------------------|------------------------------|
| <b>Carbon Dioxide</b> | Not available          | Not established     | Available.                  | No data                      |
| <b>Nitrogen</b>       | Not hazardous          | Not available       | Not available               | No data                      |

## Section 12: Ecological Information

### Fate and Transport

|                       | <b>Eco toxicity</b>  | <b>Persistence / Degradability</b>  | <b>Bioaccumulation / Accumulation</b>                      | <b>Mobility in Environment</b> |
|-----------------------|--|---|--|--------------------------------|
| <b>Carbon Dioxide</b> | Fish toxicity: 150000 ug/L 48 day(s) (Mortality) Brown trout (Salmo trutta)<br>Invertebrate toxicity: Not available<br>Algal toxicity: Not available<br>Phyto toxicity: Not available<br>Other toxicity: Not available | Relatively non-persistent in the environment. Moderately volatile from water. | Accumulates very little in the bodies of living organisms. | Leaches through the soil       |
| <b>Nitrogen</b>       | Fish toxicity: Not available<br>Invertebrate toxicity: Not available<br>Algal toxicity: Not available<br>Phyto toxicity: Not available<br>Other toxicity: Not available  | Not available   | Not available  | Not available                  |

## Section 13: Disposal Considerations

|                       |  |
|-----------------------|--|
| <b>Carbon Dioxide</b> | Dispose in accordance with all applicable regulations. |
| <b>Nitrogen</b>       | Dispose in accordance with all applicable regulations. |

## Section 14: Transportation Information

U.S. DOT 49 CFR 172.101

### DOT Information For This Mixture

|                           |   |
|---------------------------|---|
| <b>Shipping Name</b>      | Compressed gas, n.o.s. (Nitrogen, Carbon Dioxide) |
| <b>UN Number</b>          | UN1956  |
| <b>Hazard Class</b>       | 2.2   |
| <b>Hazard Information</b> | Non-Flammable Gas                                 |

### Individual Component Information

|  | Proper Shipping Name | ID Number | Hazard Class or Division | Packing Group  | Labeling Requirements | Passenger Aircraft or Railcar Quantity Limitations | Cargo Aircraft Only Quantity Limitations | Additional Shipping Description |
|--|----------------------|-----------|--------------------------|----------------|-----------------------|--|--|---------------------------------|
| <b>C<br/>a<br/>r<br/>b<br/>o<br/>n<br/>D<br/>i<br/>o<br/>x<br/>i<br/>d<br/>e</b> | Carbon dioxide       | UN1013    | 2.2                      | Not applicable | 2.2                   | 75 kg or L   | 150kg                                    | None                            |
| <b>N<br/>i<br/>t<br/>r<br/>o<br/>g<br/>e<br/>n</b>                               | Nitrogen, compressed | UN1066    | 2.2                      | Not applicable | 2.2                   | 75 kg or L   | 150 kg                                   | N/A                             |

### Canadian Transportation of Dangerous Goods

|  | Shipping Name        | UN Number | Class | Packing Group / Risk Group |
|--|----------------------|-----------|-------|----------------------------|
| <b>C<br/>a<br/>r<br/>b<br/>o<br/>n<br/>D<br/>i<br/>o<br/>x<br/>i<br/>d<br/>e</b> | Carbon dioxide       | UN1013    | 2.2   | Not applicable             |
| <b>N<br/>i<br/>t<br/>r<br/>o<br/>g<br/>e<br/>n</b>                               | Nitrogen, compressed | UN1066    | 2.2   | Not applicable             |

## Section 15: Regulatory Information

### U.S. Regulations

|  | CERCLA Sections | SARA 355.30    | SARA 355.40    |
|--|-----------------|----------------|----------------|
| <b>C<br/>a<br/>r<br/>b<br/>o<br/>n<br/>D<br/>i<br/>o<br/>x<br/>i<br/>d<br/>e</b> | Not regulated.  | Not regulated. | Not regulated. |
| <b>N<br/>i<br/>t<br/>r<br/>o<br/>g<br/>e<br/>n</b>                               | Not regulated.  | Not regulated. | Not regulated. |

### SARA 370.21

|  | Acute | Chronic | Fire | Reactive | Sudden Release |
|--|-------|---------|------|----------|----------------|
| <b>C<br/>a<br/>r<br/>b<br/>o<br/>n<br/>D<br/>i<br/>o<br/>x<br/>i<br/>d<br/>e</b> | Yes   | No      | No   | No       | Yes            |
| <b>N<br/>i<br/>t<br/>r<br/>o<br/>g<br/>e<br/>n</b>                               | Yes   | No      | No   | No       | Yes            |

### SARA 372.65

|                       |                |
|-----------------------|----------------|
| <b>Carbon Dioxide</b> | Not regulated. |
| <b>Nitrogen</b>       | Not regulated. |

### OSHA Process Safety

|                       |                |
|-----------------------|----------------|
| <b>Carbon Dioxide</b> | Not regulated. |
| <b>Nitrogen</b>       | Not regulated. |

### State Regulations

|  |                          |
|--|--------------------------|
|  | <b>CA Proposition 65</b> |
|--|--------------------------|

|                       |                |
|-----------------------|----------------|
| <b>Carbon Dioxide</b> | Not regulated. |
| <b>Nitrogen</b>       | Not regulated. |

### Canadian Regulations

|                       | <b>WHMIS Classification</b> |
|-----------------------|-----------------------------|
| <b>Carbon Dioxide</b> | A                           |
| <b>Nitrogen</b>       | A                           |

### National Inventory Status

|                       | <b>US Inventory (TSCA)</b> | <b>TSCA 12b Export Notification</b> | <b>Canada Inventory (DSL/NDSL)</b> |
|-----------------------|----------------------------|-------------------------------------|------------------------------------|
| <b>Carbon Dioxide</b> | Listed on inventory.       | Not listed.                         | Listed on inventory.               |
| <b>Nitrogen</b>       | Listed on inventory.       | Not listed.                         | Listed on inventory.               |

## Section 16: Other Information

|                       | <b>NFPA Rating</b>                      |
|-----------------------|---|
| <b>Carbon Dioxide</b> | HEALTH=3 FIRE=0 REACTIVITY=0 SPECIAL=SA |
| <b>Nitrogen</b>       | HEALTH=0 FIRE=0 REACTIVITY=0 SPECIAL=SA |

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard