

### Section 1: Product and Company Identification

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

Product Code: 3039

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

### 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>Oxygen</b>   | 7782-44-7 | 0.1%          |
| <b>Nitrogen</b> | 7727-37-9 | balance       |

|                 | Chemical Substance       | Chemical Family | Trade Names   |
|-----------------|--------------------------|-----------------|---|
| <b>Oxygen</b>   | OXYGEN, COMPRESSED GAS   | Inorganic gases | OXYGEN; DIOXYGEN; MOLECULAR OXYGEN; OXYGEN MOLECULE; PURE OXYGEN; UN 1072; O2   |
| <b>Nitrogen</b> | NITROGEN, COMPRESSED GAS | Inorganic gases | DIATOMIC NITROGEN; DINITROGEN; NITROGEN; NITROGEN-14; NITROGEN GAS; UN 1066; N2 |

## Section 4: First Aid Measures

|                 | Skin Contact                           | Eye Contact                      | Ingestion  | Inhalation   | Note to Physicians               |
|-----------------|--|----------------------------------|--|--|----------------------------------|
| <b>Oxygen</b>   | None expected                          | None expected                    | Not likely route of exposure                           | If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.  | None                             |
| <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

|                 | Suitable Extinguishing Media  | Products of Combustion     | Protection of Firefighters   |
|-----------------|---|----------------------------|--|
| <b>Oxygen</b>   | Non-flammable. Use extinguishing agent appropriate for the material which is burning. Use water in large quantities for fires involving oxygen. | Oxides of burning material | <ul style="list-style-type: none"> <li>Respiratory protection may be needed for frequent or heavy exposure.</li> <li>None</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

|                 | Personal Precautions   | Environmental Precautions                           | Methods for Containment                      |
|-----------------|--|---|--|
| <b>Oxygen</b>   | Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering. | Avoid contact with combustible materials.           | 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. |

|               | Methods for Cleanup     | Other Information |
|---------------|-------------------------|-------------------|
| <b>Oxygen</b> | Stop leak and ventilate | None              |

|                 | Methods for Cleanup | Other Information |
|-----------------|---------------------|-------------------|
| <b>Nitrogen</b> | N/A                 | N/A               |

## Section 7: Handling and Storage

|                 | Handling  | Storage                                      |
|-----------------|---|--|
| <b>Oxygen</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. |
| <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>Oxygen</b>   | OXYGEN, COMPRESSED GAS: No occupational exposure limits established. |
| <b>Nitrogen</b> | NITROGEN, COMPRESSED GAS:<br>NITROGEN: ACGIH (simple asphyxiant)     |

### Engineering Controls

Handle only in fully enclosed systems.

|                 | Eye Protection                                | Skin Protection                      | Respiratory Protection   |
|-----------------|---|--------------------------------------|--|
| <b>Oxygen</b>   | Eye protection not required, but recommended. | Protective clothing is not required. | Respiratory protection may be needed for frequent or heavy exposure. |
| <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>Oxygen</b>   | Gas            | Clear      | Colorless | N/A                  | Gas           | Odorless | Tasteless |
| <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>Oxygen</b>   | Not flammable | Not available | Not available         | Nonflammable             | Nonflammable           | Nonflammable           |
| <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>Oxygen</b>   | -297 F (-183 C) | -360 F (-218 C) | 760 mmHg @ -183 C | 1.1 (Air=1)   | Not applicable   | 3.2% @ 25 C      | Not applicable | Not available  | Not applicable   | 0.02075 cP @ 25 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 |

|                 | <b>Molecular Weight</b> | <b>Molecular Formula</b> | <b>Density</b>   | <b>Weight per Gallon</b> | <b>Volatility by Volume</b> | <b>Volatility</b> | <b>Solvent Solubility</b> |
|-----------------|-------------------------|--------------------------|------------------|--------------------------|-----------------------------|-------------------|---------------------------|
| <b>Oxygen</b>   | 31.9988                 | O <sub>2</sub>           | 1.309 g/L @ 25 C | Not available            | Not applicable              | Not applicable    | Soluble: Alcohol          |
| <b>Nitrogen</b> | 28.0134                 | N <sub>2</sub>           | 1.2506 g/L       | Not available            | 100%                        | 1                 | Soluble: Liquid ammonia   |

## Section 10: Stability and Reactivity

|                 | <b>Stability</b>                            | <b>Conditions to Avoid</b>                  | <b>Incompatible Materials</b>   |
|-----------------|---|---|---|
| <b>Oxygen</b>   | Stable at normal temperatures and pressure. | Stable at normal temperatures and pressure. | Combustible materials, halo carbons, metals, bases, reducing agents, amines, metal salts, oxidizing materials, alkaline earth and alkali metals |
| <b>Nitrogen</b> | Stable at normal temperatures and pressure. | Stable at normal temperatures and pressure. | Metals, oxidizing materials   |

|                 | <b>Hazardous Decomposition Products</b> | <b>Possibility of Hazardous Reactions</b> |
|-----------------|---|---|
| <b>Oxygen</b>   | Miscellaneous decomposition products    | Will not polymerize.                      |
| <b>Nitrogen</b> | Oxides of nitrogen                      | Will not polymerize.                      |

## Section 11: Toxicology Information

### Acute Effects

|                 | <b>Oral LD50</b> | <b>Dermal LD50</b> | <b>Inhalation</b>  |
|-----------------|------------------|--------------------|--|
| <b>Oxygen</b>   | Not established  | Not established    | Irritation, changes in body temperature, nausea, difficulty breathing, irregular heartbeat, dizziness, disorientation, hallucinations, mood swings, pain in extremities, tremors, lung congestion, convulsions |
| <b>Nitrogen</b> | Not available    | Not available      | Nausea, vomiting, difficulty breathing, headache, drowsiness, dizziness, tingling sensation, loss of coordination, convulsions, coma   |

|                 | <b>Eye Irritation</b>   | <b>Skin Irritation</b>                        | <b>Sensitization</b>                    |
|-----------------|---|---|---|
| <b>Oxygen</b>   | No information on significant adverse effects                   | No information on significant adverse effects | No significant target effects reported. |
| <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>Oxygen</b>   | Not known.             | Available.          | 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>Oxygen</b> | Fish toxicity: Not available<br>Invertebrate toxicity: Not available<br>Algal toxicity: Not available<br>Phyto toxicity: Not available | Not available                      | Low bioaccumulation                   | Not available                  |

|                 |   |               |               |               |
|-----------------|---|---------------|---------------|---------------|
|                 | Other toxicity: Not available   |               |               |               |
| <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>Oxygen</b>   | Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001. |
| <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, Oxygen) |
| <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>Oxygen</b>   | Oxygen, compressed   | UN1072    | 2.2                      | Not available  | 2.2; 5.1              | 75 kg or L   | 150 kg                                   | N/A                             |
| <b>Nitrogen</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>Oxygen</b>   | Oxygen, compressed   | UN1072    | 2.2; 5.1 | Not applicable             |
| <b>Nitrogen</b> | Nitrogen, compressed | UN1066    | 2.2      | Not applicable             |

## Section 15: Regulatory Information

### U.S. Regulations

|                 | <b>CERCLA Sections</b> | <b>SARA 355.30</b> | <b>SARA 355.40</b> |
|-----------------|------------------------|--------------------|--------------------|
| <b>Oxygen</b>   | Not regulated.         | Not regulated.     | Not regulated.     |
| <b>Nitrogen</b> | Not regulated.         | Not regulated.     | Not regulated.     |

### SARA 370.21

|                 | <b>Acute</b> | <b>Chronic</b> | <b>Fire</b> | <b>Reactive</b> | <b>Sudden Release</b> |
|-----------------|--------------|----------------|-------------|-----------------|-----------------------|
| <b>Oxygen</b>   | No           | No             | Yes         | No              | Yes                   |
| <b>Nitrogen</b> | Yes          | No             | No          | No              | Yes                   |

### SARA 372.65

|                 |                |
|-----------------|----------------|
| <b>Oxygen</b>   | Not regulated. |
| <b>Nitrogen</b> | Not regulated. |

### OSHA Process Safety

|                 |                |
|-----------------|----------------|
| <b>Oxygen</b>   | Not regulated. |
| <b>Nitrogen</b> | Not regulated. |

### State Regulations

|                 | <b>CA Proposition 65</b> |
|-----------------|--------------------------|
| <b>Oxygen</b>   | Not regulated.           |
| <b>Nitrogen</b> | Not regulated.           |

### Canadian Regulations

|                 | <b>WHMIS Classification</b> |
|-----------------|-----------------------------|
| <b>Oxygen</b>   | A,C                         |
| <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>Oxygen</b>   | Listed on inventory.       | Not listed.                         | Not determined.                    |
| <b>Nitrogen</b> | Listed on inventory.       | Not listed.                         | Listed on inventory.               |

## Section 16: Other Information

|                 | <b>NFPA Rating</b>                      |
|-----------------|---|
| <b>Oxygen</b>   | HEALTH=0 FIRE=0 REACTIVITY=0 SPECIAL=OX |
| <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