

# Safety Data Sheet

## Nitrous Oxide

**PurityPlus Gases**  
6331 East 30th Street  
P.O. Box 19907  
Indianapolis, IN 46219-0907  
317.562.1483 (tel)  
317.562.1484 (fax)

### Section 1: Product and Company Identification

**PurityPlus Gases**

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P.O. Box 19907  
Indianapolis, IN 46219-0907  
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Product Code: Nitrous Oxide

### Section 2: Hazards Identification



**Danger**

**Hazard Classification:**

Aspiration Hazard (Category 1)  
Gases Under Pressure  
Oxidizing Gas (Category 1)

**Hazard Statements:**

Contains gas under pressure; may explode if heated  
May be fatal if swallowed and enters airways  
May cause or intensify fire; oxidizer

**Precautionary Statements**

**Prevention:**

Keep reduction valves/valves and fittings free from oil and grease.  
Keep and store away from clothing and combustible materials.

**Response:**

Do NOT induce vomiting.  
If swallowed: Rinse mouth. Do NOT induce vomiting.  
Immediately call a poison center or doctor.  
In case of fire: Stop leak if safe to do so.

**Storage:**

Protect from sunlight.  
Store in well-ventilated place.  
Store locked up.

**Disposal:**

Dispose of contents and/or container in accordance with applicable regulations.

**Section 3: Composition/Information on Ingredients**

|              |
|--------------|
| <b>CAS #</b> |
| 10024-97-2   |

| Chemical Substance | Chemical Family | Trade Names  |
|--------------------|-----------------|--|
| NITROUS OXIDE      | inorganic, gas  | DINITROGEN MONOXIDE; FACTITIOUS AIR; LAUGHING GAS; HYPONITROUS ACID ANHYDRIDE; NITROGEN (I) OXIDE; NITROGEN OXIDE; STCC 4904340; UN 1070; NITROGEN OXIDE (N2O); DINITROGEN OXIDE; NITROUS OXIDE, COMPRESSED; N2O |

**Section 4: First Aid Measures**

| Skin Contact   | Eye Contact                      | Ingestion  | Inhalation   | Note to Physicians               |
|--|----------------------------------|--|--|----------------------------------|
| 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. | 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 |
|---|------------------------|----------------------------|
| Non-flammable. Use suitable extinguishing media for surrounding fire. | Non-flammable          | ▪ Non-flammable            |

**Section 6: Accidental Release Measures**

| Personal Precautions   | Environmental Precautions    | Methods for Containment                      |
|--|------------------------------|--|
| Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering. Avoid contact with combustible materials. | No adverse effects expected. | Stop leak if possible without personal risk. |

| Methods for Cleanup                     | Other Information |
|---|-------------------|
| Stop leak, evacuate and ventilate area. | None              |

**Section 7: Handling and Storage**

| Handling  | Storage                                      |
|---|--|
| Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.105. | Keep separated from incompatible substances. |

## Section 8: Exposure Controls/Personal Protection

### Exposure Guidelines

NITROUS OXIDE: 50 ppm ACGIH TWA 25 ppm (46 mg/m<sup>3</sup>) NIOSH recommended TWA (halogenated anesthetic gas)

### Engineering Controls

Handle only in fully enclosed systems.

| Eye Protection   | Skin Protection  | Respiratory Protection |
|--|--|------------------------|
| 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. | Non-flammable          |

### 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       |
|----------------|------------|-----------|----------------------|---------------|------------|-------------|
| Gas            | Clear      | Colorless | N/A                  | Gas           | Sweet odor | Sweet taste |

| Flash Point   | Flammability  | Partition Coefficient | Autoignition Temperature | Upper Explosive Limits | Lower Explosive Limits |
|---------------|---------------|-----------------------|--------------------------|------------------------|------------------------|
| 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        |
|----------------|----------------|------------------|---------------|------------------|------------------|----------------|----------------|------------------|------------------|
| -128 F (-89 C) | -132 F (-91 C) | 760 mmHg @ -88 C | 1.53 (Air=1)  | Not applicable   | 59% @ 25 C       | Not applicable | Not available  | Not applicable   | 0.0145 cP @ 25 C |

| Molecular Weight | Molecular Formula | Density           | Weight per Gallon | Volatility by Volume | Volatility     | Solvent Solubility   |
|------------------|-------------------|-------------------|-------------------|----------------------|----------------|--|
| 44.01            | N <sub>2</sub> O  | 1.8122 g/L @ 25 C | Not available     | Not applicable       | Not applicable | Soluble: Sulfuric acid, alcohol, alkali solutions, ether, oils |

## Section 10: Stability and Reactivity

| Stability  | Conditions to Avoid  | Incompatible Materials  |
|--|--|---|
| Stable at normal temperatures and pressure. Decomposes to nitrogen and oxygen at high temperatures | Stable at normal temperatures and pressure. Decomposes to nitrogen and oxygen at high temperatures | Combustible materials, metals, bases, reducing agents, peroxides, metal salts, metal oxides, hydrogen |

| Hazardous Decomposition Products | Possibility of Hazardous Reactions |
|----------------------------------|------------------------------------|
| Oxides of nitrogen               | Will not polymerize.               |

## Section 11: Toxicology Information

### Acute Effects

| Oral LD50     | Dermal LD50   | Inhalation   |
|---------------|---------------|--|
| Not available | Not available | Nausea, vomiting, symptoms of drunkenness, hyperactivity or drowsiness, hearing loss, suffocation, death |

| Eye Irritation                    | Skin Irritation             | Sensitization   |
|-----------------------------------|-----------------------------|---|
| Liquid: frostbite, blurred vision | Liquid: blisters, frostbite | Potentially fatal if inhaled, central nervous system depression, difficulty breathing<br>TERATOGEN/EMBRYOTOXIN - can harm the unborn child, based on human information. |

## Chronic Effects

| Carcinogenicity   | Mutagenicity | Reproductive Effects | Developmental Effects |
|---|--------------|----------------------|-----------------------|
| IARC: Human Inadequate Evidence, Animal Inadequate Evidence, Group 3 (Anesthetics, volatile); ACGIH: A4 -Not Classifiable as a Human Carcinogen | Available.   | Available.           | No data               |

## Section 12: Ecological Information

### Fate and Transport

| Eco toxicity  | Persistence / Degradability | Bioaccumulation / Accumulation | Mobility in Environment |
|---|-----------------------------|--------------------------------|-------------------------|
| 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

Dispose in accordance with all applicable regulations.

## Section 14: Transportation Information

U.S. DOT 49 CFR 172.101

| 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 |
|----------------------|-----------|--------------------------|----------------|-----------------------|--|--|---------------------------------|
| Nitrous oxide        | UN1070    | 2.2                      | Not applicable | 2.2; 5.1              | N/A  | N/A                                      | N/A                             |

### Canadian Transportation of Dangerous Goods

| Shipping Name | UN Number | Class    | Packing Group / Risk Group |
|---------------|-----------|----------|----------------------------|
| Nitrous oxide | UN1070    | 2.2; 5.1 | Not applicable             |

## Section 15: Regulatory Information

### U.S. Regulations

| CERCLA Sections | SARA 355.30    | SARA 355.40    |
|-----------------|----------------|----------------|
| Not regulated.  | Not regulated. | Not regulated. |

### SARA 370.21

| Acute | Chronic | Fire | Reactive | Sudden Release |
|-------|---------|------|----------|----------------|
| Yes   | No      | No   | No       | Yes            |

### SARA 372.65

Not regulated.

### OSHA Process Safety

Not regulated.

### State Regulations

#### CA Proposition 65

Not regulated.

## Canadian Regulations

### WHMIS Classification

A,C

## National Inventory Status

| US Inventory (TSCA)  | TSCA 12b Export Notification | Canada Inventory (DSL/NDSL) |
|----------------------|------------------------------|-----------------------------|
| Listed on inventory. | Not listed.                  | Not determined.             |

## Section 16: Other Information

### NFPA Rating

HEALTH=1 FIRE=0 REACTIVITY=0

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