



# Safety data sheet

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First edition: 26/07/2013

Last modified: 28/05/2015

## Nitrous oxide in capsules

### 1 Chemical Product and Company Identification

**Product** : Nitrous oxide capsules with a maximum content of 33 ml  
**Chemical formula** : N<sub>2</sub>O  
**Synonyms** : Dinitrogen Monoxide; Factitious Air; Laughing Gas; Hyponitrons Acid Anhydride; Nitrogen (I) Oxide; Nitrogen Oxide; Dinitrogen Oxide  
**Usage and Restrictions** : Preparation of foods and for industrial use. Do not inhale. Carry out risk assessment before industrial use.  
**Company name** : iSi North America Inc. Website: [www.isi.com](http://www.isi.com)  
175 Route 46 West E-mail: [info@isi.com](mailto:info@isi.com)  
Fairfield, NJ07004 phone: 1-973-227-2426  
**Emergency number** : 1-800-424-9300 (Chemtrec 24Hr Emergency)

### 2 Hazard Identification

**Physical State** : Colorless compressed gas, odorless or with a slightly sweet odor, under pressure.  
**Emergency Overview** : Danger! Gas under pressure; Oxidizer; Can Aggravate Fire; Inhalation Can Cause Dizziness, Irregular Heartbeat, Narcosis, Nausea or Asphyxiation; May cause Target Organ Damage; Danger of Explosion if Overheated.  
**Safety Instructions** : Do Not Inhale, Puncture or Incinerate; Keep Out of the Reach of Children; Keep in a Well Ventilated Location; Protect From Direct Sunlight

### 3 Composition/Information on components

#### Material/Composition : Material

| Designation of material | Content | CAS no.    | EC no.    | Index no. | Registration no. | Classification  |
|-------------------------|---------|------------|-----------|-----------|------------------|---|
| Dinitrogen oxide        | 100%    | 10024-97-2 | 233-032-0 | ----      | NOTE 2           | O; R8<br>.....<br>Ox. Gas 1 (H270)<br>Liq. Gas (H280) |

Does not contain any other components or impurities which could affect the classification of this product. Notes: Listed in Appendix IV/V REACH, exempt from registration.

### 4 First aid

- **Inhalation** : High concentrations can cause asphyxiation. Symptoms can include loss of mobility and consciousness. The victim does not notice the asphyxiation. Narcotic effects can be produced at low concentrations. Symptoms can include dizziness, headache, nausea and coordination problems. The victim should be made to wear respiratory equipment and brought into fresh air. Keep them warm and calm. Consult a doctor. Attempt artificial respiration if the victim stops breathing. Victim may need supplemental oxygen. Physician should be advised of the possibility of anoxia.
- **Ingestion** : Ingestion is not seen as a possible method of exposure.



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#### 5 Fire-fighting measures

- Specific risks** : The effect of fire can cause the container to burst/explode. Promotes combustion.
- Hazardous combustion products** : The effect of fire can cause thermal decomposition and result in the release of the following toxic and/or caustic substances: Nitrogen monoxide/nitrogen dioxide.
- Extinguishing agent** : All normal extinguishing agents appropriate to the surrounding fire can be used.
- Specific methods** : Move away from the container and cool with water from a safe position.
- Special protective gear for the fire department** : Use respiratory gear and chemical protection suit.

#### 6 Measures if released accidentally

- Personnel-related Safety measures** : Ensure adequate ventilation.  
Remove ignition sources.
- Environmental protection** : No particular measures
- Cleaning methods** : Ventilate the area.

#### 7 Handling and storage

- Handling** : Only use equipment suitable for this product and the pressure and temperature specified. In case of doubt, consult the supplier. Follow the instructions of the supplier. Keep away from ignition sources, including electrostatic discharge. Do not puncture or heat over 50°C. Protect from physical damage.
- Storage** : Store the containers in a well-ventilated place at less than 50°C.

#### 8 Restricting and monitoring of exposure/personal protective gear

- Personal protective gear** : Do not smoke while handling the product.  
Ensure adequate ventilation.
- Workplace limit** : The NIOSH recommend exposure limit (REL) for N<sub>2</sub>O is 25ppm as a time-weighted average (TWA). The American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit value (TLV) for N<sub>2</sub>O is 50 ppm as an 8-hour TWA. There is no OSHA PEL.



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#### 9 Physical and chemical characteristics

|                                      |  |
|--------------------------------------|--|
| <b>Physical state at 20 °C</b>       | : Gas.   |
| <b>Color</b>                         | : Colorless gas.   |
| <b>Odor &amp; Taste</b>              | : Slightly Sweet.<br>Slight warning effect at high concentrations.   |
| <b>Molecular weight</b>              | : 44   |
| <b>Melting point [°C]</b>            | : -90.81°C/-131.8°F  |
| <b>Boiling point [°C]</b>            | : -88.5°C/-127.3°F   |
| <b>Critical temperature [°C]</b>     | : 36.4/97.5°F  |
| <b>Vapor pressure [20°C]</b>         | : 50.8 bar/736 psig at 20°C/68°F   |
| <b>Relative density, gas (air=1)</b> | : 1.5  |
| <b>Filling density</b>               | : max 750 kg/m <sup>3</sup> / 46.75 lb/ft <sup>3</sup>   |
| <b>Solubility in water [mg/l]</b>    | : 2.2  |
| <b>Flash point [Vol.% in air]</b>    | : Oxidation agent.   |
| <b>Ignition temperature [°C]</b>     | : Not applicable   |
| <b>Other information</b>             | : Gas/vapors are heavier than air. They can accumulate in confined spaces, especially at floor level or in lower-level areas |
| <b>Viscosity</b>                     | : 0.0145 cP@25C  |

#### 10 Stability and reactivity

|   |   |
|---|---|
| <b>Hazardous decomposition products</b> | : Thermal decomposition produces toxic materials which can have a corrosive effect in the presence of humidity. In the presence of catalysts (e.g. halogen compounds, mercury, nickel, platinum), decomposition can occur at lower temperatures and the decomposition rate increases. |
| <b>Incompatible materials</b>           | : Can react strongly with combustible materials.<br>Can react strongly with reduction agents.<br>Strongly oxidizes organic materials.   |
| <b>Conditions to be avoided</b>         | : At temperatures of over 575°C, at atmospheric pressure, nitrous oxide breaks down into nitrogen and oxygen. Heat. Pressurized dinitrogen monoxide can break down at temperatures of 300 °C or more. Heat.   |
| <b>Chemical stability</b>               | : The breakdown of nitrous oxide is irreversible and exothermic and leads to a considerable increase in pressure.   |

#### 11 Information on toxicology

|                                  |  |
|----------------------------------|--|
| <b>Toxicological information</b> | : There is no scientific consensus as to possible toxic effects, but some studies indicate that nitrous oxide may cause damage to the reproduction system, the upper respiratory tract, or the central nervous system. |
|----------------------------------|--|

#### 12 Environmental information

|  |       |
|--|-------|
| <b>Greenhouse potential [CO<sub>2</sub>=1]</b> | : 298 |
|--|-------|



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#### 13 Notes on disposal

**General** : Release into the atmosphere in a well ventilated place.  
Avoid inhalation or releasing large quantities into the atmosphere. Do not release into small rooms, sewers, basements, pits and similar places where the accumulation of gas could be hazardous. Consult your supplier if you require advice.

#### 14 Notes on transport

**(a) Ground or sea transport**

**U.S. DOT 49 CFR 172.101** : ORM-D Consumer Commodity

**(b) Air shipment**

**PROPER SHIPPING NAME** : Nitrous oxide

**ID NUMBER** : UN1070

**HAZARD CLASS OR DIVISION** : 2.2

**LABELING REQUIREMENTS** : 2.2; 5.1

#### 15 Legal regulations

OSHA Hazard Communication Standard (29 CFR 1910.1200) Hazard Class(es): Compressed Gas; Oxidizer.  
EPA SARA Title III Section 312 (40 CFR 370) Hazard Classification: Sudden Release of Pressure Hazard; Fire Hazard.

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65) WARNING! This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

#### 16 Other information

Can cause asphyxiation in high concentrations.  
The risk of asphyxiation is often overlooked and must be made clear when training employees.  
Contact with liquid can cause cold burns/frost bite.

**Date of SDS Preparation** : 28 May 2015

**WAIVER OF LIABILITY** : The information contained in this document does not constitute a contractual assurance of product qualities. It is based on the latest knowledge. Before the product can be used in any new process or trial, careful tests of the material compliance and safety should be carried out.

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