

## SAFETY DATA SHEET

Version 6.1  
Revision Date 07/24/2018  
Print Date 12/05/2018

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1. PRODUCT AND COMPANY IDENTIFICATION

## 1.1 Product identifiers

Product name : Nitrous oxide-<SP>15</>N<SB>2</>

Product Number : 490377

Brand : Aldrich

CAS-No. : 20621-02-7

## 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

## 1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.  
3050 Spruce Street  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765

Fax : +1 800 325-5052

## 1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

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2. HAZARDS IDENTIFICATION

## 2.1 Classification of the substance or mixture

**GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Gases under pressure (Liquefied gas), H280

Oxidizing liquids (Category 2), H272

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Inhalation (Category 4), H332

Acute toxicity, Dermal (Category 4), H312

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word : Danger

Hazard statement(s)

H272 : May intensify fire; oxidizer.

H280	Contains gas under pressure; may explode if heated.
H302 + H312 + H332	Harmful if swallowed, in contact with skin or if inhaled.
Precautionary statement(s)	
P210	Keep away from heat.
P220	Keep/Store away from clothing/ combustible materials.
P221	Take any precaution to avoid mixing with combustibles.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/ eye protection/ face protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P302 + P352 + P312	IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/doctor if you feel unwell.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P363	Wash contaminated clothing before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P410 + P403	Protect from sunlight. Store in a well-ventilated place.
P501	Dispose of contents/ container to an approved waste disposal plant.

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Synonyms	:	Dinitrogen-<SP>15</><I>N</><SB>2</> monoxide
Formula	:	$^{15}\text{N}_2\text{O}$
Molecular weight	:	46.00 g/mol
CAS-No.	:	20621-02-7

#### Hazardous components

Component	Classification	Concentration
<b>Nitrous oxide-15N2</b>		
	Press. Gas Liquefied gas; Ox. Liq. 2; Acute Tox. 4; H272, H280, H302 + H312 + H332	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact

Flush eyes with water as a precaution.

#### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

#### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

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### 5. FIREFIGHTING MEASURES

#### 5.1 Extinguishing media

##### Suitable extinguishing media

Dry powder Dry sand

#### 5.2 Special hazards arising from the substance or mixture

Nitrogen oxides (NO<sub>x</sub>)

#### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

#### 5.4 Further information

Use water spray to cool unopened containers.

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### 6. ACCIDENTAL RELEASE MEASURES

#### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

For personal protection see section 8.

#### 6.2 Environmental precautions

Do not let product enter drains.

#### 6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

#### 6.4 Reference to other sections

For disposal see section 13.

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### 7. HANDLING AND STORAGE

#### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Keep away from heat and sources of ignition.

For precautions see section 2.2.

#### 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Store under inert gas. hygroscopic

Storage class (TRGS 510): 2A: Gases

#### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1 Control parameters

##### Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Nitrous oxide-15N <sub>2</sub>	20621-02-7	TWA	50.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Central Nervous System impairment Hematologic effects Embryo/fetal damage Not classifiable as a human carcinogen		

		TWA	25.000000 ppm 46.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		REL for exposure to waste anesthetic gas TWA over the time exposed		
		PEL	50 ppm 90 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		TWA	50 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Hematologic effects Embryo/fetal damage Not classifiable as a human carcinogen		
		TWA	25 ppm 46 mg/m3	USA. NIOSH Recommended Exposure Limits
		REL for exposure to waste anesthetic gas TWA over the time exposed		

## 8.2 Exposure controls

### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### Personal protective equipment

#### Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

#### Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Control of environmental exposure

Do not let product enter drains.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

- |  |                     |
|--|---------------------|
| a) Appearance                              | Form: Liquefied gas |
| b) Odour                                   | No data available   |
| c) Odour Threshold                         | No data available   |
| d) pH                                      | No data available   |
| e) Melting point/freezing point            | -91 °C (-132 °F)    |
| f) Initial boiling point and boiling range | -88 °C (-126 °F)    |
| g) Flash point                             | No data available   |
| h) Evaporation rate                        | No data available   |

- |   |  |
|---|--|
| i) Flammability (solid, gas)                    | No data available  |
| j) Upper/lower flammability or explosive limits | No data available  |
| k) Vapour pressure                              | 68.9 hPa at 21 °C (70 °F)  |
| l) Vapour density                               | No data available  |
| m) Relative density                             | No data available  |
| n) Water solubility                             | No data available  |
| o) Partition coefficient: n-octanol/water       | No data available  |
| p) Auto-ignition temperature                    | No data available  |
| q) Decomposition temperature                    | No data available  |
| r) Viscosity                                    | No data available  |
| s) Explosive properties                         | No data available  |
| t) Oxidizing properties                         | The substance or mixture is classified as oxidizing with the category 2. |

## 9.2 Other safety information

No data available

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## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

No data available

### 10.5 Incompatible materials

No data available

### 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Nitrogen oxides (NO<sub>x</sub>)

Other decomposition products - No data available

In the event of fire: see section 5

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## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

No data available

Inhalation: No data available

Dermal: No data available

No data available

#### Skin corrosion/irritation

No data available

#### Serious eye damage/eye irritation

No data available

**Respiratory or skin sensitisation**

No data available

**Germ cell mutagenicity**

No data available

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**Reproductive toxicity**

No data available

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Additional Information**

RTECS: Not available

When nitrous oxide is inhaled in high concentrations for only a few seconds, it affects the central nervous system and may induce symptoms of intoxication., Nitrous oxide is known to cause anemia in humans who are repeatedly overexposed., Subtle effects on the central nervous system (CNS) have been reported in man at concentrations of 50 to 500 ppm., Epidemiological evidence exists that indicates nitrous oxide may cause embryofetal toxicity in humans resulting in spontaneous abortions.

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**12. ECOLOGICAL INFORMATION****12.1 Toxicity**

No data available

**12.2 Persistence and degradability**

No data available

**12.3 Bioaccumulative potential**

No data available

**12.4 Mobility in soil**

No data available(Nitrous oxide-15N2)

**12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**12.6 Other adverse effects**

No data available

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## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Contact a licensed professional waste disposal service to dispose of this material.

#### Contaminated packaging

Dispose of as unused product.

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## 14. TRANSPORT INFORMATION

### DOT (US)

UN number: 1070      Class: 2.2 (5.1)

Proper shipping name: Nitrous oxide

Poison Inhalation Hazard: No

### IMDG

UN number: 1070      Class: 2.2 (5.1)

EMS-No: F-C, S-W

Proper shipping name: NITROUS OXIDE

### IATA

UN number: 1070      Class: 2.2 (5.1)

Proper shipping name: Nitrous oxide

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## 15. REGULATORY INFORMATION

### SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### SARA 311/312 Hazards

Reactivity Hazard, Acute Health Hazard

### Massachusetts Right To Know Components

	CAS-No.	Revision Date
Nitrous oxide-15N2	20621-02-7	1993-04-24

### Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Nitrous oxide-15N2	20621-02-7	1993-04-24

	CAS-No.	Revision Date
Nitrous oxide-15N2	20621-02-7	1993-04-24

### New Jersey Right To Know Components

	CAS-No.	Revision Date
Nitrous oxide-15N2	20621-02-7	1993-04-24

### California Prop. 65 Components

	CAS-No.	Revision Date
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.	20621-02-7	2013-12-20

Nitrous oxide-15N2

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## 16. OTHER INFORMATION

### Full text of H-Statements referred to under sections 2 and 3.

H272	May intensify fire; oxidizer.
H280	Contains gas under pressure; may explode if heated.
H302	Harmful if swallowed.
H302 + H312 +	Harmful if swallowed, in contact with skin or if inhaled.
H332	
H312	Harmful in contact with skin.
H332	Harmful if inhaled.

### Further information

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### Preparation Information

Sigma-Aldrich Corporation  
Product Safety – Americas Region  
1-800-521-8956  
Version: 6.1

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