



Product name: Nitrous oxide

Issue date: 15.01.2026

SDS

Safety Data Sheet

SDS No. : 23865110315201



Creator: Cairui Chemical Technology (Shanghai) CO.,LTD

TEL : +86 21 69110391

E-mail: service@51ghs.com

Safety data sheet

according to Regulation (EU) No 2020/878

Product name: Nitrous oxide

Print date: 15.01.2026

Version 1.0

Issue Date:15.01.2026

SECTION 1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name : Nitrous oxide

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

Use of the Substance/Mixture : As a pharmacologic agent to produce anesthesia, a food additive as a propellant, and an additive to fuels to increase available oxygen in combustion.

1.3 Details of the supplier of the safety data sheet

Company : Alizee Gas International Trading Co., Ltd.

Address : 108Tongning Road, DevelopmentZone, Jurong City, JiangsuProvince, China.

Telephone : +86 137 05206979

Telefax : +86 137 05206979

E-mail address : gail@alizeegas.com

1.4 Emergency telephone number

Emergency telephone number : +86 137 05206979

SECTION 2. Hazards identification

2.1 Classification of the substance or mixture

2.1.1 Classification according to Regulation (EC) No 1272/2008 (CLP)

Ox. Gas 1	H270
Refrigerated liquefied gas	H281
STOT SE 3	H336

2.1.2 Additional information:

For full text of Hazard- and EU Hazard-statements: see SECTION 16.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 [CLP]

Safety data sheet

according to Regulation (EU) No 2020/878

Product name: Nitrous oxide

Version 1.0

Print date: 15.01.2026

Issue Date:15.01.2026

Hazard pictograms



Signal word:

Danger

Hazard statements:

H270 May cause or intensify fire; oxidiser
H281 Contains refrigerated gas; may cause cryogenic burns or injury
H336 May cause drowsiness or dizziness

Precautionary statements:

P220 Keep/Store away from clothing and other combustible materials.
P244 Keep reduction valves free from grease and oil.
P282 Wear cold insulating gloves and either face shield or eye protection.
P261 Avoid breathing dust/fume/gas/mist/ vapours/spray.
P271 Use only outdoors or in a well-ventilated area.
P370 + P376 In case of fire: Stop leak if safe to do so.
P336 + P315 Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice/attention.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 Call a POISON CENTER/doctor if you feel unwell.
P403 Store in a well-ventilated place.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental Hazard information (EU): Not applicable.

2.3 Other hazards

This product contains no substances assessed to be PBT or vPvB at levels of 0.1% or higher.

Endocrine disrupting properties

Environment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Safety data sheet

according to Regulation (EU) No 2020/878

Product name: Nitrous oxide

Print date: 15.01.2026

Version 1.0

Issue Date: 15.01.2026

Human Health : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3. Composition/information on ingredients

3.1 Substances

Registration number	Classification according to Regulation (EU) 1272/2008 (CLP)	Concentration (% w/w)
Nitrous oxide (CAS No.: 10024-97-2) (EC No.: 233-032-0)		
	Ox. Gas 1, H270 Press. Gas (Liq.), H280 STOT SE 3, H336	≥99.0%

3.2 Mixtures

Not applicable

SECTION 4. First aid measures

4.1 Description of first aid measures

- If inhaled : Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Perform cardiopulmonary resuscitation if breathing stopped.
- On skin contact : In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance.
- On contact with eyes : Immediately flush eyes thoroughly with water for at least 15 minutes.
- On ingestion : Ingestion is not considered a potential route of exposure.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache and nausea.

4.3 Indication of any immediate medical attention and special treatment needed

Safety data sheet

according to Regulation (EU) No 2020/878

Product name: Nitrous oxide
Version 1.0

Print date: 15.01.2026
Issue Date:15.01.2026

Treatment : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use extinguishing agent suitable for type of surrounding fire. SMALL FIRE: Dry chemical or CO₂. LARGE FIRE: Water spray, fog or regular foam.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Exposure to fire may cause containers to rupture/explode. Supports combustion. If involved in a fire the following toxic and/or corrosive fumes may be produced by thermal decomposition: Nitric oxide/nitrogen dioxide.

5.3 Advice for firefighters

Special protective equipment : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Further information : No information available.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Try to stop release. Evacuate area. Monitor concentration of released product. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Eliminate ignition sources. Ensure adequate air ventilation. Prevent from entering sewers and basements, or any place where its accumulation can be dangerous. Act in accordance with local emergency plan. Stay upwind.

6.2 Environmental precautions

Environmental precautions : Try to stop release.

6.3 Methods and materials for containment and cleaning up

Safety data sheet

according to Regulation (EU) No 2020/878

Product name: Nitrous oxide

Print date: 15.01.2026

Version 1.0

Issue Date: 15.01.2026

Methods for cleaning up : Ventilate area.

6.4 Reference to other sections

References to other sections, if applicable, have been provided in the previous sub-sections.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : The product must be handled in accordance with good industrial hygiene and safety procedures. Only experienced and properly instructed persons should handle gases under pressure. Consult supplier for specific recommendations. Consider pressure relief device(s) in gas installations. Ensure the complete gas system was (or is regularly) checked for leaks before use. Do not smoke while handling product. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Do not breathe gas. Avoid release of product into atmosphere.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Observe all regulations and local requirements regarding storage of containers. Containers should not be stored in conditions likely to encourage corrosion. Container valve guards or caps should be in place. Containers should be stored in the vertical position and properly secured to prevent them from falling over. Stored containers should be periodically checked for general condition and leakage. Keep container below 50°C in a well ventilated place. Segregate from flammable gases and other flammable materials in store. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible materials.

7.3 Specific end use(s)

no data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Chemical name	Occupational Exposure Limits		Regulation
Nitrous oxide	TWA	180 mg/m ³ ;100 ppm	Austria
Nitrous oxide	STEL	720 mg/m ³ ;400 ppm	Austria
Nitrous oxide	TWA	91 mg/m ³ ;50 ppm	Belgium

Safety data sheet

according to Regulation (EU) No 2020/878

Product name: Nitrous oxide

Version 1.0

Print date: 15.01.2026

Issue Date: 15.01.2026

Nitrous oxide	TWA	90 mg/m ³ ;50 ppm	Denmark
Nitrous oxide	STEL	180 mg/m ³ ;100 ppm	Denmark
Nitrous oxide	TWA	180 mg/m ³ ;100 ppm	Finland
Nitrous oxide	TWA	180 mg/m ³ ;100 ppm	Germany (AGS)
Nitrous oxide	STEL	360 mg/m ³ ;200 ppm	Germany (AGS)
Nitrous oxide	TWA	180 mg/m ³ ;100 ppm	Germany (DFG)
Nitrous oxide	STEL	360 mg/m ³ ;200 ppm	Germany (DFG)
Nitrous oxide	TWA	180 mg/m ³	Hungary
Nitrous oxide	STEL	360 mg/m ³	Hungary
Nitrous oxide	TWA	90 mg/m ³ ;50 ppm	Ireland
Nitrous oxide	TWA	90 mg/m ³ ;50 ppm	Norway
Nitrous oxide	TWA	90 mg/m ³	Poland
Nitrous oxide	TWA	92 mg/m ³ ;50 ppm	Spain
Nitrous oxide	TWA	180 mg/m ³ ;100 ppm	Sweden
Nitrous oxide	STEL	900 mg/m ³ ;500 ppm	Sweden
Nitrous oxide	TWA	182 mg/m ³ ;100 ppm	Switzerland
Nitrous oxide	STEL	364 mg/m ³ ;200 ppm	Switzerland

8.2 Exposure controls

- Engineering controls : Provide adequate general and local exhaust ventilation. Systems under pressure should be regularly checked for leakages. Ensure exposure is below occupational exposure limits (where available). Gas detectors should be used when oxidising gases may be released. Consider the use of a work permit system e.g. for maintenance activities.
- Eye protection : Wear safety glasses with side shields. Wear goggles when transfilling or breaking transfer connections.
- Hand protection : Wear working gloves when handling gas containers.
- Body and skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection : Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose 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.

Environmental exposure controls

Safety data sheet

according to Regulation (EU) No 2020/878

Product name: Nitrous oxide

Version 1.0

Print date: 15.01.2026

Issue Date: 15.01.2026

See SECTION 7: Handling and storage and SECTION 13: Disposal considerations for measures to prevent excessive environmental exposure during use and waste disposal.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance:	:	gas. [Compressed gas.], colourless
Odour	:	slightly sweet
Odour threshold	:	no data available
pH	:	no data available
Melting point	:	-90.8°C (-131.4°F)
Boiling point	:	-88.5°C (-127.3°F)
Flash point	:	not applicable for gases and gas mixtures.
Evaporation rate	:	not applicable for gases and gas mixtures.
Flammability (solid, gas)	:	Extremely flammable in the presence of the following materials or conditions: reducing materials and combustible materials.
Upper/lower flammability or explosive limits	:	no data available
Vapour pressure	:	5060 kPa (20 °C)
Vapour density	:	1.53 (Air = 1)
Relative density	:	1.2 (liquid, water=1)
Water solubility	:	1500 mg/l
Partition coefficient: n-octanol/water	:	0.4
Auto-ignition temperature	:	not applicable
Decomposition temperature	:	no data available
Viscosity, dynamic	:	not applicable
Explosive properties	:	not applicable
Oxidising properties	:	oxidiser

Safety data sheet

according to Regulation (EU) No 2020/878

Product name: Nitrous oxide
Version 1.0

Print date: 15.01.2026
Issue Date: 15.01.2026

9.2 Other information
no data available

SECTION 10: Stability and Reactivity

- 10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.
- 10.2 Chemical stability : Stable under normal conditions. At temperatures over 575°C and at atmospheric pressure, nitrous oxide decomposes into nitrogen and oxygen. In the presence of catalysts (e.g. halogen products, mercury, nickel, platinum) the rate of decomposition increases and decomposition can occur at even lower temperatures. Nitrous oxide dissociation is irreversible and exothermic, leading to a considerable rise in pressure. Temperatures above 150°C (300°F) shall be avoided by all practical means, to reduce the likelihood of an explosive decomposition of the nitrous oxide.
- 10.3 Possibility of hazardous reactions : Hazardous reactions or instability may occur under certain conditions of storage or use. Conditions may include the following: contact with combustible materials. Reactions may include the following: risk of causing fire.
- 10.4 Conditions to avoid : Heat.
- 10.5 Incompatible materials : May react violently with combustible materials. May react violently with reducing agents.
- 10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
Shall not be classified as acutely toxic.

Skin corrosion/irritation
Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation
Shall not be classified as irritant to eye.

Safety data sheet

according to Regulation (EU) No 2020/878

Product name: Nitrous oxide

Version 1.0

Print date: 15.01.2026

Issue Date: 15.01.2026

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

May cause drowsiness or dizziness.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

11.2 Information on other hazards

Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 12: Ecological information

12.1 Toxicity

Classification criteria are not met.

12.2 Persistence and degradability

Not applicable for inorganic gases. Study scientifically unjustified.

12.3 Bioaccumulative potential

Product / Substance is a gas. Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Partition into water is unlikely.

12.4 Mobility in soil

Safety data sheet

according to Regulation (EU) No 2020/878

Product name: Nitrous oxide

Print date: 15.01.2026

Version 1.0

Issue Date: 15.01.2026

Product / Substance is a gas. Because of its high volatility, the product is unlikely to cause ground or water pollution. Partition into soil is unlikely.

12.5 Results of PBT and vPvB assessment

Not classified as PBT or vPvB.

12.6 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : May be vented to atmosphere in a well ventilated place. Discharge to atmosphere in large quantities should be avoided. Do not discharge into any place where its accumulation could be dangerous. Ensure that the emission levels from local regulations or operating permits are not exceeded.

SECTION 14: Transport Information

Land transport

ADR

14.1. UN number : 1070
14.2. UN proper shipping name: NITROUS OXIDE
14.3. Transport hazard class(es): 2.2 (5.1)
14.4. Packing group : Not applicable
14.5. Environmental hazards : None
14.6. Special precautions for user : Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Sea transport

IMDG

14.1. UN number : 1070
14.2. UN proper shipping name: NITROUS OXIDE
14.3. Transport hazard class(es): 2.2 (5.1)

Safety data sheet

according to Regulation (EU) No 2020/878

Product name: Nitrous oxide
Version 1.0

Print date: 15.01.2026
Issue Date:15.01.2026

- 14.4. Packing group : Not applicable
14.5. Environmental hazards : None
14.6. Special precautions for user : Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
Consult IMO regulations before transporting ocean bulk
14.7. Maritime transport in bulk according to IMO instruments

Air transport

IATA/ICAO

- 14.1. UN number: : 1070
14.2. UN proper shipping name: : NITROUS OXIDE
14.3. Transport hazard class(es): : 2.2 (5.1)
14.4. Packing group: : Not applicable
14.5. Environmental hazards: : None
14.6. Special precautions for user : Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH Regulation (EC) No 1907/2006

This product contains only components that have been either registered, are exempt from registration, are regarded as registered or are not subject to registration according to Regulation (EC) No. 1907/2006 (REACH)., The aforementioned indications of the REACH registration status are provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. It is the buyer's/user's responsibility to ensure that his/her understanding of the regulatory status of this product is correct.

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

Safety data sheet

according to Regulation (EU) No 2020/878

Product name: Nitrous oxide

Print date: 15.01.2026

Version 1.0

Issue Date:15.01.2026

Listed in Regulation: Not applicable

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance/mixture.

SECTION 16: Other information

Full text of H-Statements referred to under section 3.

H270	May cause or intensify fire; oxidiser
H281	Contains refrigerated gas; may cause cryogenic burns or injury
H336	May cause drowsiness or dizziness

Abbreviations and acronyms

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute toxicity estimate
CAS-No.	Chemical Abstracts Service number
CLP	Classification, Labelling and Packaging
Ebc50	Concentration at which 50% reduction of biomass is observed
EC50	Median effective concentration
EN	European Norm
EPA	Environmental Protection Agency
ErC50	Concentration at which a 50% inhibition of growth rate is observed
EyC50	Concentration at which 50 % inhibition of yield is observed
IATA_C	International Air Transport Association (Cargo)
IBC	International Bulk Chemical Code
ICAO	International Civil Aviation Organization
ISO	International Standard Organization
IMDG	International Maritime Dangerous Goods
LC50	Median Lethal Concentration
LD50	Median Lethal Dose
LOEC	Lowest Observed Effect Concentration
LOEL	Lowest observed effect level
MARPOL	International Convention for the Prevention of Marine Pollution from SI
n.o.s.	Not Otherwise Specified
NOAEC	No Observed Adverse Effect Concentration
NOAEL	No observed adverse effect level
NOEC	No Observed Effect Concentration
NOEL	No Observed Effect Level
OECD	Organisation for Economic Co-operation and Development
OPPTS	Office of Prevention, Pesticides and Toxic Substances
PBT	Persistent, Bioaccumulative and Toxic
STEL	Short term exposure limit
TWA	Time Weighted Average (TWA)
vPvB	very Persistent and very Bioaccumulative

Safety data sheet

according to Regulation (EU) No 2020/878

Product name: Nitrous oxide

Version 1.0

Print date: 15.01.2026

Issue Date:15.01.2026

The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer specific SDSs, we are not and cannot be responsible for SDSs obtained from any source other than ourselves. If you have obtained an SDS from another source or if you are not sure that the SDS you have is current, please contact us for the most current version.
