



Nitric oxide, compressed

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
 Reference number: EIGA088
 Issue date: 16/01/2013 Revision date: 20/11/2024 Supersedes version of: 21/12/2021 Version: 1.2

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

1.1. Product identifier

Product form	: Substance
Name	: Nitric oxide, compressed
Trade name	: Nitric oxide, 2.5
EC-No.	: 233-271-0
CAS-No.	: 10102-43-9
REACH registration No.	: 01-2120766630-54
Product code	: 000010021691
Formula	: NO

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

1.2.1. Relevant identified uses

Relevant identified uses	: Industrial use. Perform risk assessment prior to use. Test gas/Calibration gas. Chemical reaction / Synthesis. Laboratory use. Use for manufacture of electronic/photovoltaic components.
Use of the substance/mixture	: Formulation of mixtures with gas in pressure receptacles. Shielding gas in gas welding. Using gas as feedstock in chemical processes. Electronic component manufacture Raw material for pharmaceutical products Fuels

1.2.2. Uses advised against

Uses advised against	: Consumer use. Uses other than those listed above are not supported, contact your supplier for more information on other uses.
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1.3. Details of the supplier of the safety data sheet

Linde Gas GmbH
 Carl-von-Linde-Platz 1
 A-4651 Stadl-Paura
 Austria
 T +43 50 4273
office@at.linde-gas.com

1.4. Emergency telephone number

Emergency number	: UMCO/NCEC: +44 1865 407333 (English); +49 89 220 61012 (German)
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Nitric oxide, compressed

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Physical hazards	Oxidising Gases, Category 1	H270
	Gases under pressure : Compressed gas	H280
Health hazards	Skin corrosion/irritation, Category 1, Sub-Category 1B	H314
	Serious eye damage/eye irritation, Category 1	H318
	Acute toxicity (inhalation:gas) Category 1	H330

Full text of H- and EUH-statements: see section 16

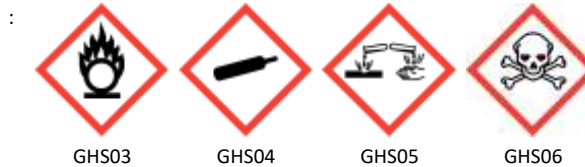
Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

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

Hazard pictograms (CLP)



Signal word (CLP)

: Danger

Hazard statements (CLP)

: H270 - May cause or intensify fire; oxidiser.
 H280 - Contains gas under pressure; may explode if heated.
 H314 - Causes severe skin burns and eye damage.
 H330 - Fatal if inhaled.

EUH-statements

: EUH071 - Corrosive to the respiratory tract.

Precautionary statements (CLP)

- Prevention

: P220 - Keep away from clothing and other combustible materials.
 P244 - Keep valves and fittings free from oil and grease.
 P260 - Do not breathe gas, vapours.

- Response

P280 - Wear eye protection, face protection, protective clothing, protective gloves.
 : P303+P361+P353+P315 - IF ON SKIN : (or hair) Take off immediately all contaminated clothing. Rinse skin with water or shower. Get immediate medical advice.
 P304+P340+P315 - IF INHALED : Remove person to fresh air and keep comfortable for breathing. Get immediate medical advice.
 P305+P351+P338+P315 - IF IN EYES : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice.
 P370+P376 - In case of fire: Stop leak if safe to do so.

- Storage

: P403 - Store in a well-ventilated place.
 P405 - Store locked up.

2.3. Other hazards

Other hazards

: Not classified as PBT or vPvB. The substance/mixture has no endocrine disrupting properties.



Nitric oxide, compressed

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Nitric oxide, compressed	CAS-No.: 10102-43-9 EC-No.: 233-271-0 REACH-no: 01-2120766630-54	100	Ox. Gas 1, H270 Press. Gas (Comp.), H280 Skin Corr. 1B, H314 Eye Dam. 1, H318 Acute Tox. 1 (Inhalation:gas), H330 (ATE=57.5 ppmv/4h) EUH071

Specific concentration limits:

Name	Product identifier	Specific concentration limits
Nitric oxide, compressed	CAS-No.: 10102-43-9 EC-No.: 233-271-0 REACH-no: 01-2120766630-54	(0.5 ≤C ≤ 100) STOT SE 3, H335

Full text of H- and EUH-statements: see section 16

Contains no other components or impurities which will influence the classification of the product.

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	: Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Perform cardiopulmonary resuscitation if breathing stopped.
First-aid measures after skin contact	: Remove contaminated clothing. Drench affected area with water for at least 15 minutes.
First-aid measures after eye contact	: Immediately flush eyes thoroughly with water for at least 15 minutes.
First-aid measures after ingestion	: Ingestion is not considered a potential route of exposure.

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

Most important symptoms and effects, both acute and delayed	Prolonged exposure to small concentrations may result in pulmonary oedema. Delayed adverse effects possible. May cause severe chemical burns to skin and cornea. Suitable first-aid treatment should be immediately available. Seek medical advice before using product. Material is destructive to tissue of the mucuous membranes and upper respiratory tract. Cough, shortness of breath, headache, nausea. See section 11.
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4.3. Indication of any immediate medical attention and special treatment needed

Obtain medical assistance. Treat with corticosteroid spray as soon as possible after inhalation.



Nitric oxide, compressed

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Water spray or fog. Product does not burn, use fire control measures appropriate for the surrounding fire.
- Unsuitable extinguishing media : Do not use water jet to extinguish.

5.2. Special hazards arising from the substance or mixture

- Reactivity in case of fire : No reactivity hazard other than the effects described in sub-sections below.
- Specific hazards : Supports combustion.
Exposure to fire may cause containers to rupture/explode.
- Hazardous combustion products : Nitric oxide/nitrogen dioxide.

5.3. Advice for firefighters

- Specific methods : Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas receptacles to rupture. Cool endangered receptacles with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems.
If possible, stop flow of product.
Use water spray or fog to knock down fire fumes if possible.
Move containers away from the fire area if this can be done without risk.
- Special protective equipment for fire fighters : Wear gas tight chemically protective clothing in combination with self contained breathing apparatus.
Standard EN 943-2: Protective clothing against liquid and gaseous chemicals, aerosols and solid particles. Gas-tight chemical protective suits for emergency teams.
Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Act in accordance with local emergency plan. Try to stop release. Evacuate area. Ensure adequate air ventilation. Eliminate ignition sources. Stay upwind. See section 8 of the SDS for more information on personal protective equipment.

6.1.2. For emergency responders

- Emergency procedures : Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Use chemically protective clothing. Monitor concentration of released product. See section 5.3 of the SDS for more information.

6.2. Environmental precautions

Reduce vapour with fog or fine water spray. Try to stop release.

6.3. Methods and material for containment and cleaning up

- Methods and material for containment and cleaning up : Hose down area with water.
Wash contaminated equipment or sites of leaks with copious quantities of water.

6.4. Reference to other sections

See also sections 8 and 13.



Nitric oxide, compressed

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Safe use of the product

- : Use only lubricants and sealings approved for the specific gas service.
Installation of a cross purge assembly between the container and the regulator is recommended.
Purge system with dry inert gas (e.g. helium or nitrogen) before gas is introduced and when system is placed out of service.
Keep equipment free from oil and grease. For more guidance, refer to the EIGA Doc. 33 - Cleaning of Equipment for Oxygen Service downloadable at <http://www.eiga.eu>.
Use no oil or grease.
Avoid exposure, obtain special instructions before use.
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.
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.
Avoid suck back of water, acid and alkalis.
Do not breathe gas.
Avoid release of product into work area.

Safe handling of the gas receptacle

- : Refer to supplier's container handling instructions.
Do not allow backfeed into the container.
Protect containers from physical damage; do not drag, roll, slide or drop.
When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders.
Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use.
If user experiences any difficulty operating valve discontinue use and contact supplier.
Never attempt to repair or modify container valves or safety relief devices.
Damaged valves should be reported immediately to the supplier.
Keep container valve outlets clean and free from contaminants particularly oil and water.
Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment.
Close container valve after each use and when empty, even if still connected to equipment.
Never attempt to transfer gases from one cylinder/container to another.
Never use direct flame or electrical heating devices to raise the pressure of a container.
Do not remove or deface labels provided by the supplier for the identification of the content of the container.
Suck back of water into the container must be prevented.
Open valve slowly to avoid pressure shock.



Nitric oxide, compressed

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

7.2. Conditions for safe storage, including any incompatibilities

Conditions for safe storage, including any incompatibilities : Segregate from flammable gases and other flammable materials in store.
 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.
 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)

None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

Nitric oxide, compressed (10102-43-9)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Nitrogen monoxide
IOEL TWA	2.5 mg/m ³
IOEL TWA [ppm]	2 ppm
Regulatory reference	COMMISSION DIRECTIVE (EU) 2017/164
Austria - Occupational Exposure Limits	
Local name	Stickstoffmonoxid
MAK (OEL TWA)	2.5 mg/m ³
MAK (OEL TWA) [ppm]	2 ppm
Regulatory reference	BGBl. II Nr. 156/2021

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

Nitric oxide, compressed (10102-43-9)	
DNEL/DMEL (additional information)	
Additional information	None established.
PNEC (additional information)	
Additional information	None established.



Nitric oxide, compressed

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Provide adequate general and local exhaust ventilation. Consider the use of a work permit system e.g. for maintenance activities. Product to be handled in a closed system and under strictly controlled conditions. Preferably use permanent leak-tight installations (e.g. welded pipes). Gas detectors should be used when toxic gases may be released. Systems under pressure should be regularly checked for leakages. Ensure exposure is below occupational exposure limits (where available).

8.2.2. Personal protection equipment

Personal protective equipment:

A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered: PPE compliant to the recommended EN/ISO standards should be selected.

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Wear goggles and a face shield when transfilling or breaking transfer connections.

Provide readily accessible eye wash stations and safety showers.

Standard EN 166 - Personal eye-protection - specifications

8.2.2.2. Skin protection

Hand protection:

Wear working gloves when handling gas containers.

Wear chemically resistant protective gloves.

Standard EN 374 - Protective gloves against chemicals.

Standard EN 388 - Protective gloves against mechanical risks, performance level 1 or higher.

Consult glove manufacturer's product information on material suitability and material thickness.

The breakthrough time of the selected gloves must be greater than the intended use period.

Other skin protection

Keep suitable chemically resistant protective clothing readily available for emergency use.

Standard EN943-1 - Full protective suits against liquid, solid and gaseous chemicals.

Wear safety shoes while handling containers.

Standard EN ISO 20345 - Personal protective equipment - Safety footwear.

Other information:

Keep suitable chemically resistant protective clothing readily available for emergency use.

Standard EN943-1 - Full protective suits against liquid, solid and gaseous chemicals.

Wear safety shoes while handling containers.

Standard EN ISO 20345 - Personal protective equipment - Safety footwear.



Nitric oxide, compressed

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

8.2.2.3. Respiratory protection

Respiratory protection:

Self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmospheres.

Keep self contained breathing apparatus readily available for emergency use.

Self contained breathing apparatus is recommended, where unknown exposure may be expected, e.g. during maintenance activities on installation systems.

Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.

Consult respiratory device supplier's product information for the selection of the appropriate device.

8.2.2.4. Thermal hazards

Thermal hazard protection:

None in addition to the above sections.

8.2.3. Environmental exposure controls

Environmental exposure controls:

Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	
Physical state	: Gas
Colour	: Brownish gas.
Form	: Compressed gas
Odour	: Pungent. Poor warning properties at low concentrations.
Odour threshold	: Odour threshold is subjective and inadequate to warn of overexposure.
Melting point	: -164 °C
Freezing point	: Not applicable
Boiling point	: -152 °C
Flammability	: Non flammable.
Oxidising properties	: Oxidiser.
Explosive limits	: Not known.
Lower explosion limit	: Not applicable.
Upper explosion limit	: Not applicable.
Flash point	: Not applicable for gases and gas mixtures.
Auto-ignition temperature	: Non flammable.
Decomposition temperature	: Not applicable.
pH	: Not applicable for gases and gas mixtures.
Viscosity, kinematic	: Not applicable for gases and gas mixtures.
Viscosity, dynamic	: 0.019 mPa·s @ 25 °C; Not applicable for gases and gas mixtures.
Solubility in water	: 46 – 57.4 mg/l
Partition coefficient n-octanol/water (Log Kow)	: Not known.
Partition coefficient n-octanol/water (Log Pow)	: Not applicable for inorganic products.
Vapour pressure	: Not applicable.
Vapour pressure at 50°C	: Not applicable.
Critical pressure	: 6480 kPa
Density	: Not applicable for gases and gas mixtures.
Relative density	: Not applicable for gases and gas mixtures.
Relative vapour density at 20°C	: Not applicable.
Relative gas density	: 1
Particle characteristics	: Not applicable
	Not applicable for gases and gas mixtures.
	Nanoforms are not relevant for gases and gas mixtures.



Nitric oxide, compressed

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Ci : 0.3
 Critical temperature : -93 °C

9.2.2. Other safety characteristics

Molecular mass : 30 g/mol
 Gas group : Compressed gas
 Additional information : None.

SECTION 10: Stability and reactivity

10.1. Reactivity

No reactivity hazard other than the effects described in sub-sections below.

10.2. Chemical stability

Decomposes at room temperature to other nitrogen oxides and nitrogen. Oxidises in air to form nitrogen dioxide which is extremely reactive.

10.3. Possibility of hazardous reactions

Violently oxidises organic material.

10.4. Conditions to avoid

High temperature. Avoid moisture in installation systems.

10.5. Incompatible materials

Air. May react violently with combustible materials. May react violently with reducing agents. Keep equipment free from oil and grease. For more guidance, refer to the EIGA Doc. 33 - Cleaning of Equipment for Oxygen Service downloadable at <http://www.eiga.eu>. For additional information on compatibility refer to ISO 11114.

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 hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity : Delayed fatal pulmonary oedema possible.
 Fatal if inhaled.
 Acute toxicity (dermal) : Not classified
 Acute toxicity (inhalation) : Fatal if inhaled.

Nitric oxide, compressed (10102-43-9)	
LC50 Inhalation - Rat [ppm]	57.5 ppm/4h

Skin corrosion/irritation : Causes severe skin burns and eye damage.
 pH: Not applicable for gases and gas mixtures.
 Serious eye damage/irritation : Causes serious eye damage.
 pH: Not applicable for gases and gas mixtures.



Nitric oxide, compressed

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Respiratory or skin sensitisation	: No known effects from this product.
Germ cell mutagenicity	: No known effects from this product.
Carcinogenicity	: No known effects from this product.
Reproductive toxicity	: Not classified
Toxic for reproduction : Fertility	: No known effects from this product.
Toxic for reproduction : unborn child	: No known effects from this product.
STOT-single exposure	: Severe corrosion to the respiratory tract at high concentrations.
Target organ(s)	: Blood. Eyes. Respiratory system.
STOT-repeated exposure	: Severe corrosion to the respiratory tract at high concentrations.
Target organ(s)	: Respiratory system.
Aspiration hazard	: Not applicable for gases and gas mixtures.

Nitric oxide, compressed (10102-43-9)	
Viscosity, kinematic	Not applicable for gases and gas mixtures.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

No additional information available

11.2.2. Other information

Other information : Delayed fatal pulmonary oedema possible, The substance/mixture has no endocrine disrupting properties.

SECTION 12: Ecological information

12.1. Toxicity

Assessment	: No ecological damage caused by this product.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified
Not rapidly degradable	

Nitric oxide, compressed (10102-43-9)	
LC50 96 h - Fish [mg/l]	No data available.
EC50 48h - Daphnia magna [mg/l]	No data available.
EC50 72h - Algae [mg/l]	No data available.

12.2. Persistence and degradability

Nitric oxide, compressed (10102-43-9)	
Assessment	Not applicable for inorganic products.



Nitric oxide, compressed

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

12.3. Bioaccumulative potential

Nitric oxide, compressed (10102-43-9)	
Partition coefficient n-octanol/water (Log Pow)	Not applicable for inorganic products.
Partition coefficient n-octanol/water (Log Kow)	Not known.

12.4. Mobility in soil

Nitric oxide, compressed (10102-43-9)	
Assessment	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

Assessment : Not classified as PBT or vPvB.

12.6. Endocrine disrupting properties

Other adverse effects : May cause pH changes in aqueous ecological systems.
 Assessment : The substance/mixture has no endocrine disrupting properties.

12.7. Other adverse effects

Other adverse effects : May cause pH changes in aqueous ecological systems.
 Effect on the ozone layer : No effect on the ozone layer.
 Effect on global warming : No known effects from this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Gas may be scrubbed in alkaline solution under controlled conditions to avoid violent reaction. Contact supplier if guidance is required. Must not be discharged to atmosphere. Ensure that the emission levels from local regulations or operating permits are not exceeded. Refer to the EIGA code of practice Doc.30 "Disposal of Gases", downloadable at <http://www.eiga.eu> for more guidance on suitable disposal methods. Return unused product in original container to supplier.

List of hazardous waste codes (from Commission Decision 2000/532/EC as amended) : 16 05 04 *: Gases in pressure containers (including halons) containing hazardous substances.

13.2. Additional information

External treatment and disposal of waste should comply with applicable local and/or national regulations.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID



Nitric oxide, compressed

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
UN 1660	UN 1660	UN 1660	UN 1660	UN 1660
14.2. UN proper shipping name				
NITRIC OXIDE, COMPRESSED	NITRIC OXIDE, COMPRESSED	Nitric oxide, compressed	NITRIC OXIDE, COMPRESSED	NITRIC OXIDE, COMPRESSED
Transport document description				
UN 1660 NITRIC OXIDE, COMPRESSED, 2.3 (5.1+8), (D)	UN 1660 NITRIC OXIDE, COMPRESSED, 2.3 (5.1+8)	UN 1660 Nitric oxide, compressed, 2.3 (5.1+8)	UN 1660 NITRIC OXIDE, COMPRESSED, 2.3 (5.1+8)	UN 1660 NITRIC OXIDE, COMPRESSED, 2.3 (5.1+8)
14.3. Transport hazard class(es)				
2.3 (5.1, 8)	2.3 (5.1, 8)	2.3 (5.1, 8)	2.3 (5.1, 8)	2.3 (5.1, 8)
		Not applicable		
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No
No supplementary information available				

14.6. Special precautions for user

Special transport precautions : Avoid transport on vehicles where the load space is not separated from the driver's compartment, Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency, Before transporting product containers: - Ensure there is adequate ventilation, - Ensure that containers are firmly secured, - Ensure valve is closed and not leaking, - Ensure valve outlet cap nut or plug (where provided) is correctly fitted, - Ensure valve protection device (where provided) is correctly fitted.

Overland transport

Classification code (ADR) : 1TOC
 Limited quantities (ADR) : 0
 Excepted quantities (ADR) : E0
 Packing instructions (ADR) : P200
 Mixed packing provisions (ADR) : MP9
 Transport category (ADR) : 1
 Special provisions for carriage - Loading, unloading and handling (ADR) : CV9, CV10, CV36
 Special provisions for carriage - Operation (ADR) : S14



Nitric oxide, compressed

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Tunnel restriction code (ADR) : D

Transport by sea

Limited quantities (IMDG) : 0
 Excepted quantities (IMDG) : E0
 Packing instructions (IMDG) : P200
 EmS-No. (Fire) : F-C
 EmS-No. (Spillage) : S-W
 Stowage category (IMDG) : D
 Stowage and handling (IMDG) : SW2
 Segregation (IMDG) : SG6, SG19
 Properties and observations (IMDG) : Non-flammable, toxic and corrosive gas. Strong oxidizing agent. On contact with air, gives off brown fumes which are toxic by inhalation, with delayed effect similar to phosgene. Heavier than air (1.04). Highly irritating to skin, eyes and mucous membranes.

Air transport

PCA Limited quantities (IATA) : FORBIDDEN
 PCA limited quantity max net quantity (IATA) : FORBIDDEN
 PCA packing instructions (IATA) : FORBIDDEN
 PCA max net quantity (IATA) : FORBIDDEN
 CAO packing instructions (IATA) : FORBIDDEN
 CAO max net quantity (IATA) : FORBIDDEN
 Special provisions (IATA) : A2
 ERG code (IATA) : 2PX

Inland waterway transport

Classification code (ADN) : 1TOC
 Special provisions (ADN) : 274, 655, 662
 Limited quantities (ADN) : 0
 Excepted quantities (ADN) : E0
 Equipment required (ADN) : PP, EP, TOX, A
 Ventilation (ADN) : VE02
 Number of blue cones/lights (ADN) : 2

Rail transport

Classification code (RID) : 1TOC
 Limited quantities (RID) : 0
 Excepted quantities (RID) : E0
 Packing instructions (RID) : P200
 Mixed packing provisions (RID) : MP9
 Transport category (RID) : 1
 Special provisions for carriage - Loading, unloading and handling (RID) : CW9, CW10, CW36
 Hazard identification number (RID) : 265

14.7. Maritime transport in bulk according to IMO instruments

IBC code : Not applicable.



Nitric oxide, compressed

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

Not listed on REACH Annex XVII

REACH Annex XIV (Authorisation List)

Not listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Not listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Not listed on the PIC list (Regulation EU 649/2012)

POP Regulation (Persistent Organic Pollutants)

Not listed on the POP list (Regulation EU 2019/1021)

Ozone Regulation (1005/2009)

Not listed on the Ozone Depletion list (Regulation EU 1005/2009)

VOC Directive (2004/42)

Restrictions on use : None.

Seveso Directive (Disaster Risk Reduction)

Seveso Directive : 2012/18/EU (Seveso III) : Covered.

Seveso III Part I (Categories of dangerous substances)	Qualifying quantity (tonnes)	
	Lower-tier	Upper-tier
H1 ACUTE TOXIC Category 1, all exposure routes	5	20
P4 OXIDISING GASES Oxidising gases, Category 1	50	200

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations

Ensure all national/local regulations are observed.

Safety data sheet in accordance with commission regulation (EU) No 2020/878.

Council Directive 89/391/EEC on the introduction of measures to encourage improvements in the safety and health of workers at work

Directive 2016/425/EEC on personal protective equipment

Directive 2014/34/EU on equipment and protective systems intended for use in potentially explosive atmospheres (ATEX)

Only products that comply with the food regulations (EC) No. 1333/2008 and (EU) No. 231/2012 and are labelled as such may be used as food additives.

This Safety Data Sheet has been produced to comply with Regulation (EU) 2015/830.

Austria

Poison Ordinance 2000 : Subject to the Poisons Ordinance 2000



Nitric oxide, compressed

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

15.2. Chemical safety assessment

A CSA has been carried out.

SECTION 16: Other information

Indication of changes:

Safety data sheet in accordance with commission regulation (EU) No 2020/878.

Abbreviations and acronyms:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
	ADR - Agreement concerning the International Carriage of Dangerous Goods by Road
	ATE - Acute Toxicity Estimate
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
CAO	Cargo Aircraft only / Cargo Aircraft only
CAS-No.	Chemical Abstract Service number
	CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
COD	Chemical oxygen demand (COD)
	CSA - Chemical Safety Assessment
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC50	Median effective concentration
EC	European Inventory of Existing Commercial Chemical Substances
ED	Endocrine disrupting properties
	EINECS - European Inventory of Existing Commercial Chemical Substances
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
IOELV	Indicative Occupational Exposure Limit Value
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
N.O.S.	Not Otherwise Specified



Nitric oxide, compressed

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Abbreviations and acronyms:	
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PCA	Passenger and Cargo Aircraft / Passenger and Cargo Aircraft
PNEC	Predicted No-Effect Concentration
	PPE - Personal Protection Equipment
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
	RMM - Risk Management Measures
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
TRGS	Technical Rules for Hazardous Substances
STOT-RE	Specific Target Organ Toxicity-Repeated Exposure
STOT-SE	Specific Target Organ Toxicity-Single Exposure
UFI	Unique Formula Identifier
	UN - United Nations
VOC	Volatile Organic Compounds
vPvB	Very Persistent and Very Bioaccumulative
WGK	Water Hazard Class

Training advice : Users of breathing apparatus must be trained. Ensure operators understand the toxicity hazard.
 Other information : Classification in accordance with the procedures and calculation methods of Regulation (EC) 1272/2008 (CLP). Key literature references and sources of data are maintained in EIGA doc 169 : 'Classification and Labelling Guide', downloadable at <http://www.Eiga.eu> .

Full text of H- and EUH-statements:	
Acute Tox. 1 (Inhalation:gas)	Acute toxicity (inhalation:gas) Category 1
EUH071	Corrosive to the respiratory tract.
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
H270	May cause or intensify fire; oxidiser.
H280	Contains gas under pressure; may explode if heated.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.



Nitric oxide, compressed

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Full text of H- and EUH-statements:	
Ox. Gas 1	Oxidising Gases, Category 1
Press. Gas (Comp.)	Gases under pressure : Compressed gas
Skin Corr. 1B	Skin corrosion/irritation, Category 1, Sub-Category 1B
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation

The classification complies with

: ATP 12

DISCLAIMER OF LIABILITY

: Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Details given in this document are believed to be correct at the time of going to press.

Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

Safety Data Sheet (SDS), EU AT

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

End of document