

**NITROGEN MIX - 10%NO****1541149 /2**

2.3 : Toxic gas.



8 : Corrosive substance.

**Danger****SECTION 1. Identification of the substance/mixture and of the company/undertaking****Product identifier**

Trade name : NITROGEN MIX - 10%NO  
SDS Nr : 1541149 /2

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

Relevant identified uses : Industrial and professional. Perform risk assessment prior to use.  
Test gas / Calibration gas. Laboratory use Contact supplier for more uses information

**Details of the supplier of the safety data sheet**

Company identification : AIR LIQUIDE (PTY) LTD  
Crn Vereeniging Road & Andre Marais Street  
Alrode, Alberton  
Gauteng SOUTH AFRICA  
Tel. : +27 87 288 1100

E-Mail address (competent person) : scr.sales@airliquide.com

**Emergency telephone number**

Emergency telephone number : +27 87 288 1100

**SECTION 2. Hazards identification****Classification of the substance or mixture****Hazard Class and Category Code Regulation EC 1272/2008 (CLP)**

- Health hazards : Corrosive to respiratory tract - (CLP : EUH071)  
Acute toxicity, Inhalation - Category 3 - Danger - (CLP : Acute Tox. 3) - H331  
Skin corrosion - Category 1B - Danger - (CLP : Skin Corr. 1B) - H314
- Physical hazards : Gases under pressure - Compressed gas - Warning - (CLP : Press. Gas) - H280

**Classification EC 67/548 or EC 1999/45**

: T+; R26  
C; R34

**Label elements****Labelling Regulation EC 1272/2008 (CLP)**

- Hazard pictograms



- Hazard pictograms code : GHS06 - GHS05 - GHS04

**NITROGEN MIX - 10%NO**
**1541149 /2**
**SECTION 2. Hazards identification (continued)**

- **Signal word** : Danger
- **Hazard statements** : H280 - Contains gas under pressure; may explode if heated.  
H314 - Causes severe skin burns and eye damage.  
H331 - Toxic if inhaled.
- **Supplemental hazard information** : EUH071 - Corrosive to respiratory tract.
- **Precautionary statements**
  - **Prevention** : P260 - Do not breathe gas, vapours.  
P280 - Wear protective gloves, protective clothing, eye protection, face protection.
  - **Response** : P304+P340+P315 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical advice / attention.  
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 / attention.  
P303+P361+P353+P315 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Get immediate medical advice / attention.
  - **Storage** : P403 - Store in a well-ventilated place.  
P405 - Store locked up.

**Other hazards**

: Corrosive to respiratory tract.

**SECTION 3. Composition/information on ingredients**
**Substance / 3.2. Mixture**
**Mixture.**

Substance name	Contents	CAS No	EC No	Index No	Registration no	Classification
Nitric oxide	: Between 9 and 11 %	10102-43-9	233-271-0	----	* 2	O; R8 T+; R26 C; R34 ----- Acute Tox. 1 (H330) Ox. Gas 1 (H270) Skin Corr. 1B (H314) EUH071 Press. Gas (H280)

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

\* 1: Listed in Annex IV / V REACH, exempted from registration.

\* 2: Registration deadline not expired.

\* 3: Registration not required: Substance manufactured or imported &lt; 1t/y

Full text of R-phrases see chapter 16. Full text of H-statements see chapter 16

**SECTION 4. First aid measures**
**Description of first aid measures**

- **Inhalation** : Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
- **Skin contact** : Remove contaminated clothing. Drench affected area with water for at least 15 minutes.
- **Eye contact** : Immediately flush eyes thoroughly with water for at least 15 minutes.
- **Ingestion** : Ingestion is not considered a potential route of exposure.

**Most important symptoms and effects, both acute and delayed**

 : May cause severe chemical burns to skin and cornea. Suitable first-aid treatment should be immediately available. Seek medical advice before using product.  
Refer to section 11.  
Corrosive to respiratory tract.

**Indication of any immediate medical attention and special treatment needed**

**NITROGEN MIX - 10%NO****1541149 /2****SECTION 4. First aid measures (continued)**

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

**SECTION 5. Fire-fighting measures****Extinguishing media**

- Suitable extinguishing media : All known extinguishants can be used.

**Special hazards arising from the substance or mixture**

- Specific hazards : Exposure to fire may cause containers to rupture/explode.  
Hazardous combustion products : Nitric oxide/nitrogen dioxide.

**Advice for fire-fighters**

- Specific methods : Coordinate fire measure to the surrounding fire. Cool endangered containers with water spray jet from a protected position. Do not empty contaminated fire water into drains.  
If possible, stop flow of product.  
Special protective equipment for fire fighters : Use self-contained breathing apparatus.  
Use chemically protective clothing.

**SECTION 6. Accidental release measures****Personal precautions, protective equipment and emergency procedures**

- : Evacuate area.  
Try to stop release.  
Ensure adequate air ventilation.  
Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.  
Monitor concentration of released product.  
Use chemically protective clothing.

**Environmental precautions**

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

**Methods and material for containment and cleaning up**

- : Ventilate area.  
Hose down area with water.  
Wash contaminated equipment or sites of leaks with copious quantities of water.

**Reference to other sections**

- : See also sections 8 and 13.

**SECTION 7. Handling and storage****Precautions for safe handling****Safe use of the product**

- : Avoid exposure, obtain special instructions before use.  
Installation of a cross purge assembly between the cylinder 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.  
Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.  
Only experienced and properly instructed persons should handle gases under pressure.  
The product must be handled in accordance with good industrial hygiene and safety procedures.  
Do not smoke while handling product.  
Ensure the complete gas system was (or is regularly) checked for leaks before use.

**NITROGEN MIX - 10%NO****1541149 /2****SECTION 7. Handling and storage (continued)**

- Safe handling of the gas receptacle** :
- Refer to supplier's container handling instructions.
  - Do not allow backfeed into the container.
  - Protect cylinders 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 cylinder 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 cylinder contents.

**Conditions for safe storage, including any incompatibilities**

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

**Specific end use(s)**

- : None.

**SECTION 8. Exposure controls/personal protection****Control parameters**

- Occupational Exposure Limits**
- Nitric oxide** : TLV© -TWA [ppm] : 25
  - DNEL: Derived no effect level** : None available.
  - PNEC: Predicted no effect concentration** : None available.

**Exposure controls**

- Appropriate engineering controls** :
- Product to be handled in a closed system and under strictly controlled conditions.
  - Preferably use only permanent leak-tight installations (e.g. welded pipes).
  - Alarm detectors should be used when toxic gases may be released.
  - Ensure exposure is below occupational exposure limits (where available).
  - Provide adequate general and local exhaust ventilation.
  - Systems under pressure should be regularly checked for leakages.
  - Consider work permit system e.g. for maintenance activities.
- Individual protection measures, e.g. 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.
  - Wear safety glasses with side shields
  - Wear leather safety gloves and safety shoes when handling cylinders.
  - Keep self contained breathing apparatus readily available for emergency use.
  - Wear goggles and a face shield when transfilling or breaking transfer connections
  - Keep suitable chemically resistant protective clothing readily available for emergency use.
  - Ensure adequate ventilation.
- Environmental exposure controls** :
- Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

**NITROGEN MIX - 10%NO****1541149 /2****SECTION 8. Exposure controls/personal protection (continued)****SECTION 9. Physical and chemical properties****Information on basic physical and chemical properties****Appearance**

- Physical state at 20°C / 101.3kPa : Gas.  
- Colour : Colourless.  
Odour : Acidic.  
Odour threshold : Odour threshold is subjective and inadequate to warn for overexposure.  
pH value : Not applicable for gas-mixtures.  
Molar mass [g/mol] : Not applicable for gases and gas-mixtures.  
Melting point [°C] : Not applicable for gas-mixtures.  
Boiling point [°C] : Not applicable for gas-mixtures.  
Flash point [°C] : Not applicable for gas-mixtures.  
Evaporation rate (ether=1) : Not applicable for gas-mixtures.  
Flammability range [vol% in air] : Not applicable for gas-mixtures.  
Vapour pressure [20°C] : Not applicable.  
Relative density, gas (air=1) : Lighter or similar to air.  
Solubility in water [mg/l] : No reliable data available.  
Partition coefficient n-octanol/water : Not applicable for gas-mixtures.  
Viscosity at 20°C [mPa.s] : Not applicable.  
Explosive Properties : Not applicable.

**Other information**

- Other data : None.

**SECTION 10. Stability and reactivity****Reactivity**

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

**Chemical stability**

- : Stable under normal conditions.

**Possibility of hazardous reactions**

- : None.

**Conditions to avoid**

- : Avoid moisture in installation systems.

**Incompatible materials**

- : Reacts with water to form corrosive acids.

**Hazardous decomposition products**

- : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

**NITROGEN MIX - 10%NO****1541149 /2****SECTION 11. Toxicological information****Information on toxicological effects**

Acute toxicity	: Toxic if inhaled.
Rat inhalation LC50 [ppm/4h]	: • Nitric oxide : 57.5
Skin corrosion/irritation	: Severe corrosion to skin at high concentrations.
Serious eye damage/irritation	: Severe corrosion to the eyes at high concentrations.
Respiratory or skin sensitisation	: No known effects from this product.
Carcinogenicity	: No known effects from this product.
Germ cell mutagenicity	: No known effects from this product.
Toxic for reproduction : Fertility	: No known effects from this product.
Toxic for reproduction : unborn child	: No known effects from this product.
STOT-single exposure	: Corrosive to respiratory tract.
STOT-repeated exposure	: No known effects from this product.
Aspiration hazard	: Not applicable for gases and gas-mixtures.

**SECTION 12. Ecological information****Toxicity**

: No data available.

**Persistence - degradability**

: No data available.

**Bioaccumulative potential**

: No data available.

**Mobility in soil**

: No data available.

**Results of PBT and vPvB assessment**

: No data available.

**Other adverse effects**

	: May cause pH changes in aqueous ecological systems.
Effect on ozone layer	: None.
Effect on the global warming	: No known ecological damage caused by this product.

**SECTION 13. Disposal considerations****Waste treatment methods**

: Must not be discharged to atmosphere.  
Refer to the code of practice of EIGA (Doc. 30/10 "Disposal of Gases, downloadable at <http://www.eiga.org>) for more guidance on suitable disposal methods  
Ensure that the emission levels from local regulations or operating permits are not exceeded.

Contact supplier if guidance is required.

**Additional information**

: None.

**NITROGEN MIX - 10%NO****1541149 /2****SECTION 14. Transport information**

UN number : 3304

Labelling ADR, IMDG, IATA

: 2.3 : Toxic gas.  
: 8 : Corrosive substance.**Land transport (ADR/RID)**

H.I. nr : 268

UN proper shipping name : COMPRESSED GAS, TOXIC, CORROSIVE, N.O.S. (Nitric oxide, Nitrogen)

Transport hazard class(es) : 2

Classification code : 1 TC

Packing Instruction(s) : P200

Tunnel Restriction : C/D : Passage forbidden through tunnels of category C when carried in tanks. Passage forbidden through tunnels of category D and E.

**Sea transport (IMDG)**

Proper shipping name : COMPRESSED GAS, TOXIC, CORROSIVE, N.O.S. (Nitric oxide, Nitrogen)

Class : 2.3

Packing group : P200

Emergency Schedule (EmS) - Fire : F-C

Emergency Schedule (EmS) - Spillage : S-U

Packing instruction : P200

**Air transport (ICAO-TI / IATA-DGR)**

Proper shipping name (IATA) : COMPRESSED GAS, TOXIC, CORROSIVE, N.O.S. (Nitric oxide, Nitrogen)

Class : 2.3

Passenger and Cargo Aircraft : DO NOT LOAD IN PASSENGER AIRCRAFT.

Cargo Aircraft only : FORBIDDEN.

**Special precautions for user**: 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 cylinder 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.**SECTION 15. Regulatory information****Safety, health and environmental regulations/legislation specific for the substance or mixture****EU legislation**

Seveso directive 96/82/EC : Covered

**National legislation**

: Ensure all national/local regulations are observed.

**Chemical Safety Assessment**

: A CSA does not need to be carried out for this product.

**NITROGEN MIX - 10%NO****1541149 /2****SECTION 16. Other information**

<b>Indication of changes</b>	: Revised safety data sheet in accordance with commission regulation (EU) No 453/2010
<b>Training advice</b>	: Users of breathing apparatus must be trained. Ensure operators understand the toxicity hazard. Receptacle under pressure.
<b>List of full text of R-phrases in section 3.</b>	: R8 : Contact with combustible material may cause fire. R26 : Very toxic by inhalation. R34 : Causes burns.
<b>List of full text of H-statements in section 3.</b>	: EUH071 - Corrosive to respiratory tract. H270 - May cause or intensify fire; oxidizer. H280 - Contains gas under pressure; may explode if heated. H314 - Causes severe skin burns and eye damage. H330 - Fatal if inhaled.
<b>Further information</b>	: Classification in accordance with calculation methods of regulation (EC) 1272/2008 CLP / (EC) 1999/45 DPD. This Safety Data Sheet has been established in accordance with the applicable European Union legislation.
<b>DISCLAIMER OF LIABILITY</b>	: 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.

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