

# Safety Data Sheet

## HYDROGEN NITROGEN CYLINDER



Safety Data Sheet dated 15/11/2018, version 3  
This version cancels and substitutes any previous version

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

1.1. Product identifier

Mixture identification:

Trade name: HYDROGEN NITROGEN CYLINDER

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

Recommended use:

cylinder for AC/R systems flushing

1.3. Details of the supplier of the safety data sheet

Company:

ERRECOM SRL

Via Industriale, 14

Corzano (BS) Italy

Tel. +39 030/9719096

Competent person responsible for the safety data sheet:

lab@errecom.it

1.4. Emergency telephone number


+39 02-6610-1029 Poison Control Center Niguarda Ca' Granda - Milano - ITALY

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### SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

EC regulation criteria 1272/2008 (CLP)

 Warning, Press. Gas (Comp.), Contains gas under pressure; may explode if heated.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Hazard pictograms:



Warning

Hazard statements:

H280 Contains gas under pressure; may explode if heated.

Precautionary statements:

P403 Store in a well-ventilated place.

Special Provisions:

None

Special provisions according to Annex XVII of REACH and subsequent amendments:

None

2.3. Other hazards

vPvB Substances: None - PBT Substances: None

Other Hazards:

In high concentrations may cause asphyxia.

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### SECTION 3: Composition/information on ingredients

3.1. Substances

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N.A.

### 3.2. Mixtures

Hazardous components within the meaning of the CLP regulation and related classification:

Qty	Name	Ident. Number	Classification
95 %	nitrogen	CAS: 7727-37-9 EC: 231-783-9	 2.5 Press. Gas H280
5 %	hydrogen	Index number: 001-001-00-9 CAS: 1333-74-0 EC: 215-605-7	 2.2/1 Flam. Gas 1 H220  2.5 Press. Gas H280

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

In case of skin contact:

No adverse effects arising from this product are expected.

In case of eyes contact:

No adverse effects arising from this product are expected.

In case of Ingestion:

Ingestion is considered an unlikely route of exposure.

In case of Inhalation:

Move victim to uncontaminated area by wearing self-contained breathing apparatus. Keep the patient relaxed and warm. Call a doctor. Proceed with artificial respiration if breathing stops.

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

In high concentrations may cause asphyxiation. Symptoms may include loss of mobility and loss of consciousness. Victims may not be aware of asphyxiation.

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

Treatment:

None

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media:

Water spray or water mist.

Carbon dioxide (CO<sub>2</sub>).

Extinguishing media which must not be used for safety reasons:

Do not use water jet.

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

Exposure to fire may cause the container to rupture or explode.

### 5.3. Advice for firefighters

Move undamaged containers from immediate hazard area if it can be done safely.

If possible stop the product leakage.

Coordinate firefighting according to the surrounding fire. Exposure to fire and heat can cause the container to rupture. Cool containers exposed to risk with showers of water from a protected position. Do not pour contaminated fire water into sewage.

If possible use water spray to break down the fumes.

## SECTION 6: Accidental release measures

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

Using the apparatus when entering area unless atmosphere is proved to be breathable.

Wear personal protection equipment.

Remove persons to safety.

See protective measures under point 7 and 8.

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- 6.2. Environmental precautions
  - Try to stop the leak.
- 6.3. Methods and material for containment and cleaning up
  - For cleaning up:
    - Ventilate the area.
- 6.4. Reference to other sections
  - See also section 8 and 13

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### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Use only specific equipment, suitable for the product, pressure and temperature of use. In case of doubt, contact the gas supplier.

Avoid release of the product into the atmosphere.

Do not breathe the gas.

Only experienced and appropriately trained personnel can handle gases under pressure.

The product must be handled according to good safety and industrial hygiene practices.

Do not smoke while handling the product.

Ensure that the entire gas distribution system has been (or is regularly) checked against leaks before use.

Consider the safety valves in gas installations.

Refer to the manufacturer's instructions for handling the container.

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 appropriate means of handling designed to transport cylinders.

Leave the protective caps of the valves in place until the container has not been fixed to a wall or a work bench or placed in a stand and is ready for use.

If the operator encounters any problems during the operation of the valve discontinue use and contact your supplier.

Never groped to repair or modify container valves or safety devices.

Damaged valves should be reported immediately to the supplier.

Keep container valve outlets clean and free from contaminates particularly oil and water.

Replace the caps and valve caps and containers, where supplied as soon as container is disconnected from the equipment.

Close container valve after each use and when empty, even if still connected to equipment.

Never groped to transfer gases from one container to another.

Never use direct flame or electrical heating to increase the internal pressure of the container.

Do not remove or deface labels from the supplier for the identification of the cylinder contents.

The containers must be stored in vertical position and properly secured to prevent the risk of tipping.

Contaminated clothing should be changed before entering eating areas.

See also section 8 for recommended protective equipment.

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

Keep container below 50 ° C in a well ventilated.

Observe the regulations and local requirements regarding storage of containers.

The containers must not be stored in conditions that promote corrosion.

The containers must be stored in vertical position and properly secured to prevent the risk of tipping.

Stored containers should be periodically checked for general conditions and leakage.

The caps and / or the caps must be mounted.

Store containers in areas where there is no risk of fire, away from heat and ignition sources.

Keep away from combustible material.

Always keep in a well ventilated place.

Incompatible materials:

None in particular. See also paragraph 10 below.

Instructions as regards storage premises:

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Cool and adequately ventilated.

- 7.3. Specific end use(s)  
Information not available.

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### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

nitrogen - CAS: 7727-37-9  
ACGIH - Notes: (D) - Asphyxia  
hydrogen - CAS: 1333-74-0  
ACGIH - Notes: (D, EX) - Asphyxia

#### DNEL Exposure Limit Values

N.A.

#### PNEC Exposure Limit Values

N.A.

#### 8.2. Exposure controls

##### Eye protection:

Protective airtight goggles (ref. Standard EN 166).

##### Protection for skin:

Safety shoes.

##### Protection for hands:

Wear work gloves when handling gas containers.  
EN 388 - Protective gloves against mechanical risks.

##### Respiratory protection:

Not needed for normal use.

##### Thermal Hazards:

None

##### Environmental exposure controls:

None

##### Appropriate engineering controls:

Whenever possible the release of asphyxiating gases, to be used for oxygen detectors.  
Provide adequate exhaust ventilation to general and local.  
Ensure exposure is well below the professional exposure limits (where available).  
Systems under pressure should be checked periodically to verify the absence of leaks.  
Consider the need for a system of work permits, for example for maintenance activities.

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### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Appearance and colour:	gas colorless
Odour:	odorless
Odour threshold:	N.A.
pH:	N.A.
Melting point / freezing point:	N.A.
Initial boiling point and boiling range:	N.A.
Solid/gas flammability:	N.A.
Upper/lower flammability or explosive limits:	N.A.
Vapour density:	N.A.
Flash point:	N.A.
Evaporation rate:	N.A.
Vapour pressure:	N.A.
Relative density:	N.A.
Solubility in water:	N.A.
Solubility in oil:	N.A.
Partition coefficient (n-octanol/water):	N.A.
Auto-ignition temperature:	N.A.
Decomposition temperature:	N.A.

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Viscosity:	N.A.
Explosive properties:	N.A.
Oxidizing properties:	N.A.
9.2. Other information	
Miscibility:	N.A.
Fat Solubility:	N.A.
Conductivity:	N.A.
Substance Groups relevant properties	N.A.
V.O.C. (w/w):	N.A.

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### SECTION 10: Stability and reactivity

- 10.1. Reactivity
  - Stable under normal conditions
- 10.2. Chemical stability
  - Stable under normal conditions
- 10.3. Possibility of hazardous reactions
  - None
- 10.4. Conditions to avoid
  - Stable under normal conditions.
- 10.5. Incompatible materials
  - None in particular.
- 10.6. Hazardous decomposition products
  - None.

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### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Toxicological information of the product:

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a) acute toxicity

Classification:	Not classified
Considerations:	Based on available data, the classification criteria are not met

b) skin corrosion/irritation

Classification:	Not classified
Considerations:	Based on available data, the classification criteria are not met

c) serious eye damage/irritation

Classification:	Not classified
Considerations:	Based on available data, the classification criteria are not met

d) respiratory or skin sensitisation

Classification:	Not classified
Considerations:	Based on available data, the classification criteria are not met

e) germ cell mutagenicity

Classification:	Not classified
Considerations:	Based on available data, the classification criteria are not met

f) carcinogenicity

Classification:	Not classified
Considerations:	Based on available data, the classification criteria are not met

g) reproductive toxicity

Classification:	Not classified
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Considerations:	Based on available data, the classification criteria are not met
h) STOT-single exposure	
Classification:	Not classified
Considerations:	Based on available data, the classification criteria are not met
i) STOT-repeated exposure	
Classification:	Not classified
Considerations:	Based on available data, the classification criteria are not met
j) aspiration hazard	
Classification:	Not classified
Considerations:	Based on available data, the classification criteria are not met

Toxicological information of the main substances found in the product:  
N.A.

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### SECTION 12: Ecological information

#### 12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.

#### HYDROGEN NITROGEN CYLINDER

Classification: Not classified for environmental hazards

Considerations: Based on available data, the classification criteria are not met

Data:

#### 12.2. Persistence and degradability

N.A.

#### 12.3. Bioaccumulative potential

N.A.

#### 12.4. Mobility in soil

N.A.

#### 12.5. Results of PBT and vPvB assessment

vPvB Substances: None - PBT Substances: None

#### 12.6. Other adverse effects

None

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### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Recover if possible. In so doing, comply with the local and national regulations currently in force.

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### SECTION 14: Transport information

#### 14.1. UN number

ADR-UN number: 1956

IATA-Un number: 1956

IMDG-Un number: 1956

#### 14.2. UN proper shipping name

ADR-Shipping Name: COMPRESSED GAS, N.O.S. (Nitrogen, Hydrogen)

IATA-Technical name: COMPRESSED GAS, N.O.S. (Nitrogen, Hydrogen)

IMDG-Technical name: COMPRESSED GAS, N.O.S. (Nitrogen, Hydrogen)

#### 14.3. Transport hazard class(es)

ADR-Class: 2

IATA-Class: 2.2

IMDG-Class: 2.2

#### 14.4. Packing group

#### 14.5. Environmental hazards

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- 14.6. Special precautions for user  
ADR-Tunnel Restriction Code: E  
IATA-Passenger Aircraft: 200  
IATA-Cargo Aircraft: 200  
IMDG-Technical name: COMPRESSED gas, N.O.S. (Nitrogen, Hydrogen)  
IMDG-EMS: F-C, S-V
- 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code  
N.A.

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### SECTION 15: Regulatory information

- 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture  
Dir. 98/24/EC (Risks related to chemical agents at work)  
Dir. 2000/39/EC (Occupational exposure limit values)  
Regulation (EC) n. 1907/2006 (REACH)  
Regulation (EC) n. 1272/2008 (CLP)  
Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013  
Regulation (EU) 2015/830  
Regulation (EU) n. 286/2011 (ATP 2 CLP)  
Regulation (EU) n. 618/2012 (ATP 3 CLP)  
Regulation (EU) n. 487/2013 (ATP 4 CLP)  
Regulation (EU) n. 944/2013 (ATP 5 CLP)  
Regulation (EU) n. 605/2014 (ATP 6 CLP)  
Regulation (EU) n. 2015/1221 (ATP 7 CLP)  
Regulation (EU) n. 2016/918 (ATP 8 CLP)  
Regulation (EU) n. 2016/1179 (ATP 9 CLP)  
Regulation (EU) n. 2017/776 (ATP 10 CLP)

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product:

Restriction 40

Restrictions related to the substances contained:

No restriction.

Where applicable, refer to the following regulatory provisions :

Directive 2012/18/EU (Seveso III)

Regulation (EC) nr 648/2004 (detergents).

Dir. 2004/42/EC (VOC directive)

Provisions related to directive EU 2012/18 (Seveso III):

Seveso III category according to Annex 1, part 1

None

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for the mixture.

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### SECTION 16: Other information

Full text of phrases referred to in Section 3:

H280 Contains gas under pressure; may explode if heated.

H220 Extremely flammable gas.

Hazard class and hazard category	Code	Description
Flam. Gas 1	2.2/1	Flammable gas, Category 1
Press. Gas	2.5	Gases under pressure
Press. Gas (Comp.)	2.5/C	Gases under pressure (Compressed gas)

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Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
Press. Gas (Comp.), H280	On basis of test data

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.

ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road.
ATE:	Acute Toxicity Estimate
ATEmix:	Acute toxicity Estimate (Mixtures)
CAS:	Chemical Abstracts Service (division of the American Chemical Society).
CLP:	Classification, Labeling, Packaging.
DNEL:	Derived No Effect Level.
EINECS:	European Inventory of Existing Commercial Chemical Substances.
GefStoffVO:	Ordinance on Hazardous Substances, Germany.
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals.
IATA:	International Air Transport Association.
IATA-DGR:	Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO:	International Civil Aviation Organization.
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG:	International Maritime Code for Dangerous Goods.
INCI:	International Nomenclature of Cosmetic Ingredients.
KSt:	Explosion coefficient.
LC50:	Lethal concentration, for 50 percent of test population.
LD50:	Lethal dose, for 50 percent of test population.
PNEC:	Predicted No Effect Concentration.
RID:	Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL:	Short Term Exposure limit.
STOT:	Specific Target Organ Toxicity.
TLV:	Threshold Limiting Value.
TWA:	Time-weighted average
WGK:	German Water Hazard Class.