

# Safety data sheet

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BASF Safety data sheet according to the United Nations' Globally Harmonized System (UN GHS)

Date / Revised: 02.02.2024

Version: 5.0

Product: **N2 LIQUID**

(ID no. 30261879/SDS\_GEN\_00/EN)

Date of print 29.06.2025

## 1. Identification

### Product identifier

## N2 LIQUID

Chemical name: nitrogen

CAS Number: 7727-37-9

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

Relevant identified uses: Chemical

Recommended use: Chemical

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

#### Company:

BASF SE

67056 Ludwigshafen

GERMANY

Operating Division Petrochemicals

Telephone: +49 621 60-42151

E-mail address: sds-petrochemicals@basf.com

### Emergency telephone number

International emergency number:

Telephone: +49 180 2273-112

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## 2. Hazards Identification

### Classification of the substance or mixture

According to UN GHS criteria

Press. Gas Refrigerated liquefied gas

For the classifications not written out in full in this section the full text can be found in section 16.

## Label elements

### Globally Harmonized System (GHS)

Pictogram:



Signal Word:

Warning

Hazard Statement:

H281

Contains refrigerated gas; may cause cryogenic burns or injury.

Precautionary Statements (Prevention):

P282

Wear cold insulating gloves and either face shield or eye protection.

Precautionary Statements (Response):

P315

Get immediate medical advice/attention.

P336

Thaw frosted parts with lukewarm water. Do not rub affected area.

Precautionary Statements (Storage):

P403

Store in a well-ventilated place.

## Other hazards

### According to UN GHS criteria

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

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## 3. Composition/Information on Ingredients

### Substances

#### Chemical nature

#### Hazardous ingredients (GHS)

According to UN GHS criteria

No particular hazards known.

For the classifications not written out in full in this section the full text can be found in section 16.

**Mixtures**

Not applicable

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**4. First-Aid Measures****Description of first aid measures**

Immediately remove contaminated clothing. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). First aid personnel should pay attention to their own safety.

If inhaled:

If difficulties occur after vapour/aerosol has been inhaled, remove to fresh air and seek medical attention.

On skin contact:

Thaw out frostbites under cold liquid or water, do not rub affected parts of the body, apply sterile dressings, consult a skin specialist.

On contact with eyes:

Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:

Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

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

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11.

frostbite, (Further) symptoms and / or effects are not known so far

Hazards: (Further) symptoms and / or effects are not known so far

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

Treatment: Symptomatic treatment (decontamination, vital functions). Artificial respiration with oxygen.

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**5. Fire-Fighting Measures****Extinguishing media**

Additional information:

Product will not burn.

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

Shut off or stop released substance/product under safe conditions. Cool endangered containers with water-spray.

**Advice for fire-fighters**

Special protective equipment:  
Wear a self-contained breathing apparatus.

Further information:  
Evacuate area of all unnecessary personnel.

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## 6. Accidental Release Measures

Shut off or stop source of leak. Shut off or stop released substance/product under safe conditions.

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

Avoid contact with the skin, eyes and clothing. Ensure adequate ventilation.

Keep people away and stay on the upwind side.

Handle in accordance with good industrial hygiene and safety practice.

### **Environmental precautions**

Discharge into the environment must be avoided.

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

Ensure adequate ventilation.

Suppress gases/vapours/mists with water spray jet.

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## 7. Handling and Storage

### **Precautions for safe handling**

Avoid contact with the skin, eyes and clothing. Refill and handle product only in closed system. Handle in accordance with good industrial hygiene and safety practice. Ensure thorough ventilation of stores and work areas.

Protection against fire and explosion:  
The substance/product is non-combustible. Avoid influence of heat.

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

No applicable information available.  
Further information on storage conditions: Keep container tightly closed in a cool, well-ventilated place.

### **Specific end use(s)**

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

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## 8. Exposure Controls/Personal Protection

### **Control parameters**

Components with occupational exposure limits

7727-37-9: Nitrogen

**Exposure controls**Personal protective equipment

## Respiratory protection:

Wear respiratory protection if ventilation is inadequate. Suitable respiratory protection for higher concentrations or long-term effect: Self-contained breathing apparatus.

## Hand protection:

When there is a risk of frostbite from escaping gas, use thermally insulated gloves (EN 511).

## Eye protection:

Safety glasses with side-shields (frame goggles) (e.g. EN 166)

## Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is required additionally to the stated personal protection equipment. Avoid contact with the skin, eyes and clothing. Ensure adequate ventilation. Avoid inhalation of vapour. At the end of the shift the skin should be cleaned and skin-care agents applied. Remove contaminated clothing immediately and dispose of safely. Handle in accordance with good industrial hygiene and safety practice.

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**9. Physical and Chemical Properties****Information on basic physical and chemical properties**

Form:	refrigerated liquified gas
Colour:	colourless
Odour:	odourless
Odour threshold:	not determined
pH value:	not applicable, of low solubility
Melting point:	-210,01 °C (1.013 hPa) Literature data.
Boiling point:	-195,79 °C (1.013 hPa) Literature data.
Flash point:	not applicable, the product is a gas
Evaporation rate:	Value can be approximated from Henry's Law Constant or vapor pressure.
Flammability:	non-flammable gas (other)

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Lower explosion limit:

As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.

Upper explosion limit:

As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.

Ignition temperature:

not applicable

Vapour pressure:

33.990 hPa  
(-147 °C)

critical pressure

Density:

1,1694 kg/m<sup>3</sup>  
(15 °C, 1.013 hPa)

Literature data., gaseous

1,250 kg/m<sup>3</sup>  
(0 °C, 1.013 hPa)

Literature data., gaseous

Relative density:

0,97

Relative vapour density (air): 0,97

Literature data., Lighter than air.

Solubility in water:

20 mg/l  
(20 °C, 1.013 hPa)

Partitioning coefficient n-octanol/water (log Kow): 0,67

(Calculation Hansch/Leo)

Self ignition:

not self-igniting

Test type: Spontaneous self-  
ignition at room-temperature.

Thermal decomposition: No decomposition if stored and handled as prescribed/indicated.

Viscosity, kinematic:

not applicable, the product is a gas  
Based on the chemical structure  
there is no indication of explosive  
properties.

Fire promoting properties: Based on its structural properties  
the product is not classified as  
oxidizing.

## Other information

Self heating ability:

It is not a substance capable of  
spontaneous heating.

SADT:

No data available.

Radioactivity:

not radioactive for transport  
purposes  
(calculated)

Adsorption/water - soil: log KOC: 1,16

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Surface tension:

Determination was not possible.

Grain size distribution:

The substance / product is marketed or used in a non solid or granular form.

Molar mass:

28,01 g/mol

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## 10. Stability and Reactivity

### Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals: No corrosive effect on metal.

Formation of

Remarks:

not applicable

flammable gases:

### Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Peroxides:

The product does not contain peroxides.

### Possibility of hazardous reactions

No hazardous reactions if stored and handled as prescribed/indicated. Extreme cooling down during expansion to normal pressure.

### Conditions to avoid

Avoid all sources of ignition: heat, sparks, open flame.

### Incompatible materials

Substances to avoid:

flammable, oxidizable substances

### Hazardous decomposition products

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No hazardous decomposition products if stored and handled as prescribed/indicated.

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## 11. Toxicological Information

### Information on toxicological effects

#### Acute toxicity

Assessment of acute toxicity:

The substance is inert. At very high air concentrations, the gas may cause dyspnoe or asphyxia by displacing oxygen. High concentrations in the air may cause narcosis.

Experimental/calculated data:

(oral): No data available concerning acute toxicity.

(by inhalation): No data available concerning acute toxicity.

(dermal):No data available concerning acute toxicity.

#### Irritation

Assessment of irritating effects:

No data available concerning irritating effects. The substance is gaseous at room temperature and pressure. Testing for this particular endpoint is technically not feasible and/or this endpoint does not represent a relevant exposure scenario. The substance is inert.

Experimental/calculated data:

Skin corrosion/irritation: No data available.

Serious eye damage/irritation: No data available.

#### Respiratory/Skin sensitization

Assessment of sensitization:

The chemical structure does not suggest a sensitizing effect. The substance is inert. The substance is gaseous at room temperature and pressure. Testing for this particular endpoint is technically not feasible and/or this endpoint does not represent a relevant exposure scenario.

Experimental/calculated data:

No data available.

#### Germ cell mutagenicity

Assessment of mutagenicity:

Not classified, due to lack of data. The chemical structure does not suggest a specific alert for such an effect. The substance is inert.

#### Carcinogenicity

Assessment of carcinogenicity:

Not classified, due to lack of data. The chemical structure does not suggest a specific alert for such an effect.

#### Reproductive toxicity

Assessment of reproduction toxicity:

Not classified, due to lack of data. The chemical structure does not suggest a specific alert for such an effect.

#### Developmental toxicity

Assessment of teratogenicity:

Not classified, due to lack of data. The chemical structure does not suggest a specific alert for such an effect.

#### Experiences in humans

Experimental/calculated data:



Product is not toxic, but will cause suffocation in concentrations that decrease the oxygen content in the air.

Specific target organ toxicity (single exposure)

Assessment of STOT single:  
not applicable

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:  
Repeated exposure to the substance by inhalative administration leads to effects similar to those found after single exposure. The substance is inert.

Aspiration hazard

not applicable

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## 12. Ecological Information

### Toxicity

Assessment of aquatic toxicity:  
There is a high probability that the product is not acutely harmful to aquatic organisms.

Toxicity to fish:  
No toxic effects occur within the range of solubility.

Aquatic invertebrates:  
No data available.

Aquatic plants:  
No data available.

Microorganisms/Effect on activated sludge:  
No data available.

Chronic toxicity to fish:  
No data available.

Chronic toxicity to aquatic invertebrates:  
No data available.

Assessment of terrestrial toxicity:  
No data available concerning terrestrial toxicity.

### Persistence and degradability

Assessment biodegradation and elimination (H<sub>2</sub>O):  
Not applicable for inorganic substances.

Elimination information:  
Study technically not feasible.

Assessment of stability in water:

According to structural properties, hydrolysis is not expected/probable.

Information on Stability in Water (Hydrolysis):

Study technically not feasible.

### **Bioaccumulative potential**

Assessment bioaccumulation potential:

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Bioaccumulation potential:

Study does not need to be conducted.

### **Mobility in soil**

Assessment transport between environmental compartments:

Volatility: The substance will rapidly evaporate into the atmosphere from the water surface.

Adsorption in soil: Adsorption to solid soil phase is not expected.

### **Results of PBT and vPvB assessment**

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): PBT assessment does not apply. Not applicable for inorganic substances.

### **Other adverse effects**

The substance is not listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

### **Additional information**

Other ecotoxicological advice:

No danger expected for the environment, as it is a natural product.

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## **13. Disposal Considerations**

### **Waste treatment methods**

Dispose of in accordance with national, state and local regulations.

Contaminated packaging:

Disposal must be made according to official regulations.

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## **14. Transport Information**

### **Land transport**

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**ADR**

UN number or ID number: UN1977  
UN proper shipping name: NITROGEN, REFRIGERATED LIQUID

Transport hazard class(es): 2.2  
Packing group: Not applicable  
Environmental hazards: no  
Special precautions for user: Tunnel code: C/E

**RID**

UN number or ID number: UN1977  
UN proper shipping name: NITROGEN, REFRIGERATED LIQUID

Transport hazard class(es): 2.2, 13  
Packing group: Not applicable  
Environmental hazards: no  
Special precautions for user: Shunting label: 13

**Inland waterway transport****ADN**

UN number or ID number: UN1977  
UN proper shipping name: NITROGEN, REFRIGERATED LIQUID

Transport hazard class(es): 2.2  
Packing group: Not applicable  
Environmental hazards: no  
Special precautions for user: None known

**Transport in inland waterway vessel**

Not evaluated

**Sea transport****IMDG**

UN number or ID number: UN 1977  
UN proper shipping name: NITROGEN, REFRIGERATED LIQUID

Transport hazard class(es): 2.2  
Packing group: Not applicable  
Environmental hazards: no  
Marine pollutant: NO  
Special precautions for user: EmS: F-C; S-V

**Air transport**

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IATA/ICAO

UN number or ID number: UN 1977

UN proper shipping name: NITROGEN, REFRIGERATED LIQUID

Transport hazard class(es): 2.2

Packing group: Not applicable

Environmental hazards: No Mark as dangerous for the environment is needed

Special precautions for user: None known

**Maritime transport in bulk according to IMO instruments**

Maritime transport in bulk is not intended.

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**15. Regulatory Information****Safety, health and environmental regulations/legislation specific for the substance or mixture**

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

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**16. Other Information**

Full text of classifications, hazard symbols and hazard statements, if mentioned in section 2 or 3:  
Press. Gas                      Gases under pressure

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

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