

## ≤15% Ethylene in Nitrogen

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878 Reference number: SDS 01483 Issue date: 9/26/2023 Version: 1.0

## **Danger**



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

#### 1.1. Product identifier

SDS no : SDS 01483

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

Relevant identified uses : Industrial and professional uses. Perform risk assessment prior to use.

Uses advised against : Consumer use

Uses other than those listed above are not supported, contact your supplier for more

information on other uses.

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

Air Liquide UK Ltd. Station Road Coleshill B46 1JY Birmingham United Kingdom

safety.aluk@airliquide.com

## 1.4. Emergency telephone number

Emergency telephone number : 01675 462695 (Available 24/7)

## **SECTION 2: Hazards identification**

## 2.1. Classification of the substance or mixture

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

Physical hazards Flammable gases, Category 1B H221

Gases under pressure : Compressed gas H280

## 2.2. Label elements

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

Hazard pictograms (CLP) :





GHS02

GHS04

Signal word (CLP) : Danger

Hazard statements (CLP) : H221 - Flammable gas.

 $\mbox{H280}$  - Contains gas under pressure; may explode if heated.

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Precautionary statements (CLP)

Kingdom

- Prevention : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.

No smoking.

- Response : P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

P381 - In case of leakage, eliminate all ignition sources.

- Storage : P403 - Store in a well-ventilated place.

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### 2.3. Other hazards

Asphyxiant in high concentrations.

These high concentrations are within the flammability range.

Not classified as PBT or vPvB.

## **SECTION 3: Composition/information on ingredients**

Not applicable 3.1. Substances

#### 3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Nitrogen	CAS-No.: 7727-37-9 EC-No.: 231-783-9 EC Index-No.: REACH-no: *1	85	Press. Gas (Comp.), H280
Ethylene	CAS-No.: 74-85-1 EC-No.: 200-815-3 EC Index-No.: 601-010-00-3 REACH-no: 01-2119462827-27	≤ 15	Flam. Gas 1A, H220 Press. Gas (Liq.), H280 STOT SE 3, H336

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

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

### **SECTION 4: First aid measures**

## 4.1. Description of first aid measures

- 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.

- Skin contact Adverse effects not expected from this product. - Eye contact Adverse effects not expected from this product.

- Ingestion Ingestion is not considered a potential route of exposure.

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

In high concentrations may cause asphyxiation. Symptoms may include loss of

mobility/consciousness. Victim may not be aware of asphyxiation.

See section 11.

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

None

## **SECTION 5: Firefighting measures**

### 5.1. Extinguishing media

- Suitable extinguishing media : Shutting off the source of the gas is the preferred method of control.

- Unsuitable extinguishing media : Do not use water jet to extinguish.

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

Specific hazards : Exposure to fire may cause containers to rupture/explode.

Hazardous combustion products : Carbon monoxide.

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

<sup>\*3:</sup> Registration not required: Substance manufactured or imported < 1t/y.



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### 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.

Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive

re-ignition may occur. Extinguish any other fire.

Move containers away from the fire area if this can be done without risk.

Special protective equipment for fire fighters : In confined space use self-contained breathing apparatus.

Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire

fighters.

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

face mask.

Standard EN 469 - Protective clothing for firefighters. Standard - EN 659: Protective gloves

for firefighters.

### **SECTION 6: Accidental release measures**

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

For non-emergency personnel : Act in accordance with local emergency plan.

Try to stop release. Evacuate area.

Eliminate ignition sources. Ensure adequate air ventilation.

Stay upwind.

See section 8 of the SDS for more information on personal protective equipment.

For emergency responders : Monitor concentration of released product.

Consider the risk of potentially explosive atmospheres.

Wear self-contained breathing apparatus when entering area unless atmosphere is proved

to be safe.

See section 5.3 of the SDS for more information.

6.2. Environmental precautions

Try to stop release.

### 6.3. Methods and material for containment and cleaning up

Ventilate area.

6.4. Reference to other sections

See also sections 8 and 13.



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### SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Safe handling of the gas receptacle

Safe use of the product

Do not breathe gas.

Avoid release of product into atmosphere.

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 regularily) 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.

Assess the risk of potentially explosive atmospheres and the need for explosion-proof equipment.

Purge air from system before introducing gas.

Take precautionary measures against static discharge.

Keep away from ignition sources (including static discharges).

Consider the use of only non-sparking tools.

Ensure equipment is adequately earthed.

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

Suck back of water into the container must be prevented.

Open valve slowly to avoid pressure shock.

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

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.

Segregate from oxidant gases and other oxidants in store.

All electrical equipment in the storage areas should be compatible with the risk of a potentially explosive atmosphere.

#### 7.3. Specific end use(s)

None

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## SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

Ethylene (74-85-1)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Ethylene
ACGIH OEL TWA [ppm]	200 ppm
Remark (ACGIH)	TLV® Basis: Asphyxia. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2019

DNEL (Derived-No Effect Level) : None established.

Ethylene (74-85-1)	
PNEC: Predicted no effect concentration	
Aqua (freshwater)	1.67 mg/l
Aqua (marine water)	1.67 mg/l

### 8.2. Exposure controls

### 8.2.1. Appropriate engineering controls

Provide adequate general and local exhaust ventilation.

Product to be handled in a closed system.

Systems under pressure should be regularily checked for leakages. Ensure exposure is below occupational exposure limits (where available). Gas detectors should be used when flammable gases/vapours may be released.

Consider the use of a work permit system e.g. for maintenance activities.

### 8.2.2. 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:

PPE compliant to the recommended EN/ISO standards should be selected.

· Eye/face protection : Wear safety glasses with side shields.

Standard EN 166 - Personal eye-protection - specifications.

· Skin protection

· Respiratory protection

- Hand protection : Wear working gloves when handling gas containers.

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

- Other : Consider the use of flame resistant anti-static safety clothing. Standard EN ISO 14116 - Limited flame spread materials.

Standard EN 1149-5 - Protective clothing: Electrostatic properties.

Wear safety shoes while handling containers.

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

: Gas filters may be used if all surrounding conditions e.g. type and concentration of the

contaminant(s) and duration of use are known.

Use gas filters with full face mask, where exposure limits may be exceeded for a short-term

period, e.g. connecting or disconnecting containers. Gas filters do not protect against oxygen deficiency.

Never use any kind of filtering respiratory protection equipment when working with this

substance due to it having poor or no warning properties.

Standard EN 14387 - Gas filter(s), combined filter(s) and standard EN136, full face masks .

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· Thermal hazards None in addition to the above sections.

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### 8.2.3. 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 at 20°C / 101.3kPa : Gas. - Colour : Colourless.

Odour Odour threshold is subjective and inadequate to warn of overexposure.

Mixture contains one or more component(s) which have the following odour:

Sweetish.

Melting point / Freezing point : Not applicable for gas mixtures. Boiling point Not applicable for gas mixtures.

It is technically not possible to determine the boiling point or range of this mixture.

Component with lowest boiling point: Nitrogen -196 °C

Flammability : Flammable gas. Lower explosion limit Calculated value: 16%

Upper explosion limit No test data or calculation method available. Flash point Not applicable for gases and gas mixtures.

Auto-ignition temperature

Auto ignition temperature for mixtures is not available. Component with lowest auto-ignition

temperature : Ethylene 440 °C

Decomposition temperature Not applicable.

Not applicable for gases and gas mixtures.

Viscosity, kinematic Not known.

Water solubility [20°C] Mixture is partially soluble in water

Partition coefficient n-octanol/water (Log Kow) Not available. Vapour pressure [20°C] Not applicable. Vapour pressure [50°C] : Not applicable. Density and/or relative density : Not applicable. : Lighter or similar to air. Relative vapour density (air=1)

Particle characteristics : Not applicable.

## 9.2. Other information

### 9.2.1. Information with regard to physical hazard classes

Explosive properties : Not applicable.

**Explosion limits** : Flammability range not available.

Oxidising properties : Not applicable.

9.2.2. Other safety characteristics

Molar mass : Not applicable for gas mixtures.

Evaporation rate Not applicable for gases and gas mixtures.

Other data None.

## **SECTION 10: Stability and reactivity**

### 10.1. Reactivity

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

Data for mixture are not available.

This mixture contains components with the following reactivity: Can form explosive mixture

with air. May react violently with oxidants.

### 10.2. Chemical stability

Stable under normal conditions.

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10.3. Possibility of hazardous reactions

Can form explosive mixture with air. May react violently with oxidants.

10.4. Conditions to avoid

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Avoid moisture in installation systems.

10.5. Incompatible materials

Air, Oxidisers.

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 : Toxicological effects not expected from this product if occupational exposure limit values are

not exceeded.

Skin corrosion/irritation : No known effects from this product.

Serious eye damage/irritation : No known effects from this product.

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.

Toxic for reproduction : Fertility : No known effects from this product.

Toxic for reproduction : unborn child : No known effects from this product.

Toxic for reproduction: unborn child : No known effects from this product.

STOT-single exposure : Classification criteria are not met.

STOT-repeated exposure : No known effects from this product.

Aspiration hazard : Not applicable for gases and gas mixtures.

11.2. Information on other hazardsNo additional information available

## **SECTION 12: Ecological information**

#### 12.1. Toxicity

Assessment : Classification criteria are not met.

EC50 48h - Daphnia magna [mg/l] : No data available. EC50 72h - Algae [mg/l] : No data available. LC50 96 h - Fish [mg/l] : No data available.

Ethylene (74-85-1)	
EC50 48h - Daphnia magna [mg/l]	62.4 mg/l
EC50 72h - Algae [mg/l]	30.3 mg/l
LC50 96 h - Fish [mg/l]	126 mg/l

Nitrogen (7727-37-9)	
EC50 48h - Daphnia magna [mg/l]	No data available.

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Nitrogen (7727-37-9)	
EC50 72h - Algae [mg/l]	No data available.
LC50 96 h - Fish [mg/l]	No data available.

### 12.2. Persistence and degradability

Assessment : No ecological damage caused by this product.

12.3. Bioaccumulative potential

Assessment : No data available.

12.4. Mobility in soil

Assessment : No ecological damage caused by this product.

12.5. Results of PBT and vPvB assessment

Assessment : Not classified as PBT or vPvB.

12.6. Endocrine disrupting properties

Assessment

12.7. Other adverse effects

Other adverse effects : No known effects from this product.

Effect on the ozone layer : No effect on the ozone layer.

Effect on global warming : Contains greenhouse gas(es).

### **SECTION 13: Disposal considerations**

### 13.1. Waste treatment methods

Contact supplier if guidance is required.

Do not discharge into areas where there is a risk of forming an explosive mixture with air.

Waste gas should be flared through a suitable burner with flash back arrestor. 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.

Refer to the EIGA code of practice Doc.30 "Disposal of Gases", downloadable at

http://www.eiga.org 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.

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## **SECTION 14: Transport information**

### 14.1. UN number or ID number

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

UN-No. : 1954

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### 14.2. UN proper shipping name

Transport by road/rail (ADR/RID) : COMPRESSED GAS, FLAMMABLE, N.O.S. (Ethylene, Nitrogen)
Transport by air (ICAO-TI / IATA-DGR) : Compressed gas, flammable, n.o.s. (Ethylene, Nitrogen)
Transport by sea (IMDG) : COMPRESSED GAS, FLAMMABLE, N.O.S. (Ethylene, Nitrogen)

14.3. Transport hazard class(es)

Labelling

2.1 : Flammable gases.

Transport by road/rail (ADR/RID)

Class : 2
Classification code : 1F
Hazard identification number : 23

Tunnel Restriction : B/D - Tank carriage: Passage forbidden through tunnels of category B, C, D and E. Other

carriage: Passage forbidden through tunnels of category D and E

Transport by air (ICAO-TI / IATA-DGR)

Class / Div. (Sub. risk(s)) : 2.1

Transport by sea (IMDG)

Class / Div. (Sub. risk(s)) : 2.1
Emergency Schedule (EmS) - Fire : F-D
Emergency Schedule (EmS) - Spillage : S-U

14.4. Packing group

Transport by road/rail (ADR/RID) : Not applicable.

Transport by air (ICAO-TI / IATA-DGR) : Not applicable.

Transport by sea (IMDG) : Not applicable.

14.5. Environmental hazards

Transport by road/rail (ADR/RID) : None.
Transport by air (ICAO-TI / IATA-DGR) : None.
Transport by sea (IMDG) : None.

### 14.6. Special precautions for user

Packing Instruction(s)

Transport by road/rail (ADR/RID) : P200.

Transport by air (ICAO-TI / IATA-DGR)

Passenger and Cargo Aircraft : Forbidden.
Cargo Aircraft only : 200.
Transport by sea (IMDG) : P200.

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.

### 14.7. Maritime transport in bulk according to IMO instruments

Not applicable.

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## **SECTION 15: Regulatory information**

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

### **EU-Regulations**

Restrictions on use : None.

Contains no substance on the REACH candidate list.

Other information, restriction and prohibition

: Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

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

**National regulations** 

Training advice

Further information

Water hazard class (WGK) : nwg - Non-hazardous to water.

Regulatory reference Ensure all national/local regulations are observed.

15.2. Chemical safety assessment

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

### **SECTION 16: Other information**

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

Abbreviations and acronyms : ATE - Acute Toxicity Estimate.

> CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008. REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation

(EC) No 1907/2006.

EINECS - European Inventory of Existing Commercial Chemical Substances.

CAS# - Chemical Abstract Service number. PPE - Personal Protection Equipment.

LC50 - Lethal Concentration to 50 % of a test population.

RMM - Risk Management Measures.

PBT - Persistent, Bioaccumulative and Toxic. vPvB - Very Persistent and Very Bioaccumulative.

STOT- SE: Specific Target Organ Toxicity - Single Exposure.

CSA - Chemical Safety Assessment.

EN - European Standard. UN - United Nations.

ADR - European Agreement concerning the International Carriage of Dangerous Goods by

IATA - International Air Transport Association.

IMDG code - International Maritime Dangerous Goods.

RID - Regulations concerning the International Carriage of Dangerous Goods by Rail.

WGK - Water Hazard Class.

STOT - RE: Specific Target Organ Toxicity - Repeated Exposure.

UFI: Unique Formula Identifier.

: Ensure operators understand the flammability hazard.

: Classification using data from databases maintained by the European Industrial Gases Association (EIGA). Data is maintained in EIGA doc 169: 'Classification and Labelling

Guide', downloadable at : http://www.eiga.eu.

Classification in accordance with the procedures and calculation methods of Regulation

(EC) 1272/2008 (CLP).

Full text of H- and EUH-statements	
Flam. Gas 1A	Flammable gases, Category 1A
Flam. Gas 1B	Flammable gases, Category 1B
H220	Extremely flammable gas.
H221	Flammable gas.

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H280	Contains gas under pressure; may explode if heated.
H336	May cause drowsiness or dizziness.
Press. Gas (Comp.)	Gases under pressure : Compressed gas
Press. Gas (Liq.)	Gases under pressure : Liquefied gas
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Narcosis

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 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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