# Safety Data Sheet

## Gasmixture: 100ppm H2S in N2

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
SDS Reference Number: EST-H2S-N2-01
Issue date: 10/13/2025 Revision date: 10/13/2025 Supersedes version of: 10/13/2025 Version: 1.1

## Warning


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

**1.1. Product identifier**

Trade name : Gasmixture: 100ppm H2S in N2
SDS no : EST-H2S-N2-01

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

Relevant identified uses : Industrial and professional use for chemical analysis, calibration, (routine) quality control, laboratory use, under controlled conditions.
Perform risk assessment prior to use.

Uses advised against : Attention: These products must not be applied to humans or animals unless they are expressly designated as medical or medicinal gases!.
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**

Elme Messer Gaas AS
Kopli 103
11712 Tallinn
Estonia
T +372 6102001
info@elmemesser.ee, www.elmemesser.ee

**1.4. Emergency telephone number**

Emergency telephone number : Mürgistusteabekeskus, Terviseamet: tel. 16662, (24h)

## SECTION 2: Hazards identification

**2.1. Classification of the substance or mixture**

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

Physical hazards Gases under pressure : Compressed gas H280

**2.2. Label elements**

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

Hazard pictograms (CLP) :

GHS04

Signal word (CLP) : Warning
Hazard statements (CLP) : H280 - Contains gas under pressure; may explode if heated.
Precautionary statements (CLP)
- Storage : P403 - Store in a well-ventilated place.
Supplemental information : Asphyxiant in high concentrations.

**2.3. Other hazards**

Asphyxiant in high concentrations.
Not classified as PBT or vPvB.
Mixture does not contain substance (s) classified as PBT or vPvB in concentrations above 0,1 weight %.
The substance/mixture has no endocrine disrupting properties.
The mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
Mixture does not contain substance(s) classified as PMT or vPvM in concentrations above 0.1 weight %.

## SECTION 3: Composition/information on ingredients

**3.1. Substances** Not applicable

**3.2. Mixtures**

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP]<br>ATE, EUH-statements, M-Factors |
|---|---|---|---|
| Nitrogen | CAS-No.: 7727-37-9<br>EC-No.: 231-783-9<br>EC Index-No.: ---<br>REACH-no: *1 | balance | Press. Gas (Comp.), H280 |
| Hydrogen sulphide | CAS-No.: 7783-06-4<br>EC-No.: 231-977-3<br>EC Index-No.: 016-001-00-4<br>REACH-no: 01-2119445737-29 | 0.01 | Flam. Gas 1A, H220<br>Press. Gas (Liq.), H280<br>Acute Tox. 2 (Inhalation:gas), H330 (ATE=440 ppmv/4h)<br>Eye Irrit. 2, H319<br>STOT SE 3, H335<br>Aquatic Acute 1, H400 |

| Name | Product identifier | Specific concentration limits (%) |
|---|---|---|
| Hydrogen sulphide | CAS-No.: 7783-06-4<br>EC-No.: 231-977-3<br>EC Index-No.: 016-001-00-4<br>REACH registration No: 01-2119445737-29 | (1 ≤ 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.*

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

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

## 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 : 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**

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

Hazardous combustion products : Sulphur 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 : In confined space use self-contained breathing apparatus.
Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters. Standard EN 469 - Protective clothing for firefighters. Standard EN 659 - Protective gloves for firefighters.
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**

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

For emergency responders : Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.
Oxygen detectors should be used when asphyxiating gases may be released.
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.

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling**

Safe use of the product : 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.
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, when provided, 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.

**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, when provided, 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**

| **Hydrogen sulphide (7783-06-4)** | |
|---|---|
| DNEL: Derived no effect level (Workers) | |
| Acute - local effects, inhalation | 14 mg/m³ |
| Acute - systemic effects, inhalation | 14 mg/m³ |
| Long-term - local effects, inhalation | 7 mg/m³ |
| Long-term - systemic effects, inhalation | 7 mg/m³ |

PNEC (Predicted No-Effect Concentration) : None established.

**8.2. Exposure controls**

**8.2.1. Appropriate engineering controls**

Provide adequate general and local exhaust ventilation.
Systems under pressure should be regularily checked for leakages.
Ensure exposure is below occupational exposure limits (where available).
Oxygen detectors should be used when asphyxiating gases 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.
Standard EN ISO 16321-1 - Eye and face protection for occupational use Part 1: General requirements.

• Skin protection

- Hand protection : Wear working gloves when handling gas containers.
Standard EN 388 - Protective gloves against mechanical risks, performance level 1 or higher.
Recommended types include wrist gloves from leather or synthetic material with equivalent performance, fabric gloves, fabric gloves with leather palms.

- Other : Wear safety shoes while handling containers.
Standard EN ISO 20345 - Personal protective equipment - Safety footwear.

• Respiratory protection : Recommended: Filter B (grey).
Self contained breathing apparatus is recommended, where unknown exposure may be expected, e.g. during maintenance activities on installation systems.
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.
Standard EN 14387 - Gas filter(s), combined filter(s) and standard EN136, full face masks .
Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.
When indicated by a risk assessment, Respiratory Protective Equipment must be used. The selection of the Respiratory Protective Device (RPD) must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected RPD.

• Thermal hazards : None in addition to the above sections.

**8.2.3. Environmental exposure controls**

None necessary.

## 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:
Rotten eggs.

Melting point / Freezing point : Not applicable for gases and 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 : Non flammable.

| | | |
|---|---|---|
| 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. |
| Water solubility [20°C] | : | No reliable data available. |
| Partition coefficient n-octanol/water (Log Kow) | : | Not applicable for gas mixtures. |
| Vapour pressure [20°C] | : | Not applicable for compressed gases and gas mixtures. |
| Vapour pressure [50°C] | : | Not applicable for compressed gases and gas mixtures. |
| Density and/or relative density | : | Not applicable for gases and gas mixtures. |
| Relative vapour density (air=1) | : | Lighter or similar to air. |
| Particle characteristics | : | Not applicable for gases and gas mixtures.<br>Nanoforms are not relevant for gases and gas mixtures. |

**9.2. Other information**

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

Oxidising properties : No oxidising properties.

**9.2.2. Other safety characteristics**

Other data : None.

## SECTION 10: Stability and reactivity

**10.1. Reactivity**

Data for mixtures 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.

**10.3. Possibility of hazardous reactions**

None.

**10.4. Conditions to avoid**

Avoid moisture in installation systems.

**10.5. Incompatible materials**

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** : Classification criteria are not met.

| Hydrogen sulphide (7783-06-4) | |
|---|---|
| LC50 Inhalation - Rat [ppm] | 712 ppm/1h (ADR)<br>440 ppm/4h (CLP) |

| | | |
|---|---|---|
| **Skin corrosion/irritation** | : | No known effects from this product. |
| **Serious eye damage/irritation** | : | Classification criteria are not met. |
| **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. |
| **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 hazards**

Other information : The substance/mixture has no endocrine disrupting properties.

## 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. |

| Hydrogen sulphide (7783-06-4) | |
|---|---|
| EC50 48h - Daphnia magna [mg/l] | 0.12 mg/l |
| EC50 72h - Algae [mg/l] | 1.87 mg/l |
| LC50 96 h - Fish [mg/l] | 0.007 - 0.019 mg/l |

| Nitrogen (7727-37-9) | |
|---|---|
| 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. |

**12.2. Persistence and degradability**
Assessment : No data available.

**12.3. Bioaccumulative potential**
Assessment : No data available.

**12.4. Mobility in soil**
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**
Assessment : The substance/mixture has no endocrine disrupting properties.

**12.7. Other adverse effects**
Other adverse effects : No known effects from this product.
Not classified as PMT or vPvM.

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**

Do not discharge into any place where its accumulation could be dangerous.
May be vented to atmosphere in a well ventilated place.
Return unused product in original container to supplier.

List of hazardous waste codes (from Commission Decision 2000/532/EC as amended) : 16 05 05 : Gases in pressure containers other than those mentioned in 16 05 04.

**13.2. Additional information**

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

## SECTION 14: Transport information

**14.1. UN number or ID number**
In accordance with ADR / RID / IMDG / IATA / ADN
UN-No. : 1956

**14.2. UN proper shipping name**
**Transport by road/rail/inland waterways (ADR/RID/ADN)** : COMPRESSED GAS, N.O.S. (Nitrogen)
**Transport by air (ICAO-TI / IATA-DGR)** : Compressed gas, n.o.s. (Nitrogen)
**Transport by sea (IMDG)** : COMPRESSED GAS, N.O.S. (Nitrogen)

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

**Labelling** :


2.2 : Non flammable, non-toxic gases.

**Transport by road/rail/inland waterways (ADR/RID/ADN)**
Class : 2
Classification code : 1A
Hazard identification number : 20
Tunnel Restriction : E - Passage forbidden through tunnels of category E

**Transport by air (ICAO-TI / IATA-DGR)**
Class / Div. (Sub. risk(s)) : 2.2

**Transport by sea (IMDG)**
Class / Div. (Sub. risk(s)) : 2.2

Emergency Schedule (EmS) - Fire : F-C
Emergency Schedule (EmS) - Spillage : S-V

**14.4. Packing group**

Transport by road/rail/inland waterways (ADR/RID/ADN) : 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/inland waterways (ADR/RID/ADN) : 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/inland waterways (ADR/RID/ADN) : P200.
Transport by air (ICAO-TI / IATA-DGR)
Passenger and Cargo Aircraft : 200.
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.

## SECTION 15: Regulatory information

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

**EU-Regulations**

Restrictions on use : Contains no substance(s) listed on the REACH Candidate List.
Other information, restriction and prohibition regulations : None.
Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals).
Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants).
Seveso Directive : 2012/18/EU (Seveso III) : Covered.

**National regulations**

No additional information available

**15.2. Chemical safety assessment**

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

## SECTION 16: Other information

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

| | | |
|---|---|---|
| Abbreviations and acronyms | : | ATE - Acute Toxicity Estimate.<br>CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008.<br>REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.<br>EINECS - European Inventory of Existing Commercial Chemical Substances.<br>CAS# - Chemical Abstract Service number.<br>PPE - Personal Protection Equipment.<br>LC50 - Lethal Concentration to 50 % of a test population.<br>RMM - Risk Management Measures.<br>PBT - Persistent, Bioaccumulative and Toxic.<br>vPvB - Very Persistent and Very Bioaccumulative.<br>STOT- SE : Specific Target Organ Toxicity - Single Exposure.<br>CSA - Chemical Safety Assessment.<br>EN - European Standard.<br>UN - United Nations.<br>ADR - Agreement concerning the International Carriage of Dangerous Goods by Road.<br>IATA - International Air Transport Association.<br>IMDG code - International Maritime Dangerous Goods.<br>RID - Regulations concerning the International Carriage of Dangerous Goods by Rail.<br>WGK - Water Hazard Class.<br>STOT - RE : Specific Target Organ Toxicity - Repeated Exposure.<br>UFI : Unique Formula Identifier.<br>ADN -International Carriage of Dangerous Goods by Inland Waterways.<br>PROC -Process category<br>.<br>ERC – Environmental release category.<br>PMT - Persistent, Mobile and Toxic.<br>vPvM – very Persistent and very Mobile. |
| Training advice | : | The hazard of asphyxiation is often overlooked and must be stressed during operator training. For more guidance, refer to EIGA SL 01 “Dangers of Asphyxiation”, downloadable at http://www.eiga.eu.. |
| Further information | : | Classification in accordance with the procedures and calculation methods of Regulation (EC) 1272/2008 (CLP).<br>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. |

| **Full text of H- and EUH-statements** | |
|---|---|
| Acute Tox. 2 (Inhalation:gas) | Acute toxicity (inhalation:gas) Category 2 |
| Aquatic Acute 1 | Hazardous to the aquatic environment – Acute Hazard, Category 1 |
| Eye Irrit. 2 | Serious eye damage/eye irritation, Category 2 |
| Flam. Gas 1A | Flammable gases, Category 1A |
| 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, Respiratory tract irritation |
| H220 | Extremely flammable gas. |
| H280 | Contains gas under pressure; may explode if heated. |
| H319 | Causes serious eye irritation. |
| H330 | Fatal if inhaled. |
| H335 | May cause respiratory irritation. |
| H400 | Very toxic to aquatic life. |

| | | |
|---|---|---|
| DISCLAIMER OF LIABILITY | : | Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.<br>Details given in this document are believed to be correct at the time of going to press.<br>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. |

**End of document**