

Tecto Gas Bottle - 5ppm to 0.99% Ammonia/Nitrogen - GDS1099

Warning



- 112L of gas
- 1,000 PSI
- 69 BAR



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

1.1. Product identifier

Trade name : AG1027 - 5ppm to 0.99% Ammonia / Nitrogen

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.

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

AG Gases & Equipment Ltd Ltd
Unit 1A, Britannic House Broom Street
GB- ST1 2ER Stoke on Trent – Staffordshire
Great Britain
T +44 (0)1782 616611
www.agequip.co.uk

1.4. Emergency telephone number

Emergency telephone number : +44 (0)1782 616611

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.

2.3. Other hazards

Asphyxiant in high concentrations.

Not classified as PBT or vPvB.

The substance/mixture has no endocrine disrupting properties.



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]
Nitrogen	CAS-No.: 7727-37-9 EC-No.: 231-783-9 EC Index-No.: --- REACH-no: *1	≤ 99.9995	Press. Gas (Comp.), H280
ammonia, anhydrous	CAS-No.: 7664-41-7 EC-No.: 231-635-3 EC Index-No.: 007-001-00-5 REACH-no: 01-2119488876-14	0.0005 – 0.99	Flam. Gas 2, H221 Press. Gas (Liq.), H280 Skin Corr. 1B, H314 Eye Dam. 1, H318 Acute Tox. 3 (Inhalation:gas), H331 Aquatic Acute 1, H400 Aquatic Chronic 2, H411

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 : Nitric oxide/nitrogen 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 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.
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 regularly) 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.



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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 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 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

ammonia, anhydrous (7664-41-7)	
Albania - Occupational Exposure Limits	
Local name	Amoniak, anhidër
OEL TWA	14 mg/m³
OEL TWA [ppm]	20 ppm
OEL STEL	36 mg/m³
OEL STEL [ppm]	50 ppm
Regulatory reference	VENDIM Nr. 522, datë 6.8.2014 PËR MIRATIMIN E RREGULLORES "PËR MBROJTJEN E SIGURISË DHE SHËNDETIT TË PUNËMARRËSVE NGA RISQET E LIDHURA ME AGJENTËT KIMIKË NË PUNË"
Austria - Occupational Exposure Limits	
Local name	Ammoniak
MAK (mg/m³)	14 mg/m³



Czech Republic - Occupational Exposure Limits	
Local name	Amoniak bezvodý
PEL (OEL TWA)	14 mg/m³
PEL (OEL TWA) [ppm]	19.8 ppm
NPK-P (OEL C)	36 mg/m³
NPK-P (OEL C) [ppm]	50.8 ppm
Remark	I - dráždí sliznice (oči, dýchací cesty), respektive kůži.
Regulatory reference	Nařízení vlády č. 361/2007 Sb. (Předpis 41/2020 Sb.)
Denmark - Occupational Exposure Limits	
Local name	Ammoniak
OEL TWA [1]	14 mg/m³
OEL TWA [2]	20 ppm
Remark	E (betyder, at stoffet har en EF-grænseværdi)
Regulatory reference	BEK nr 290 af 13/02/2021
Estonia - Occupational Exposure Limits	
Local name	Ammoniaak
OEL TWA	14 mg/m³
OEL TWA [ppm]	20 ppm
OEL STEL	36 mg/m³
OEL STEL [ppm]	50 ppm
Regulatory reference	Vabariigi Valitsuse 20. märtsi 2001. a määruse nr 105 (RT I, 17.10.2019, 2); Vabariigi Valitsuse 10. märtsi 2019. a määruse nr 84
Finland - Occupational Exposure Limits	
Local name	Vedetön ammoniakki
HTP (OEL TWA) [1]	14 mg/m³
HTP (OEL TWA) [2]	20 ppm
HTP (OEL STEL)	36 mg/m³
HTP (OEL STEL) [ppm]	50 ppm
Regulatory reference	HTP-ARVOT 2020 (Sosiaali- ja terveysministeriö)
France - Occupational Exposure Limits	
Local name	Ammoniac anhydre
VME (OEL TWA)	7 mg/m³
VME (OEL TWA) [ppm]	10 ppm
VLE (OEL C/STEL)	14 mg/m³
VLE (OEL C/STEL) [ppm]	20 ppm
Remark	Valeurs réglementaires contraignantes
Regulatory reference	Article R4412-149 du Code du travail (réf.: INRS ED 984, 2016; Décret n° 2019-1487; Décret n° 2020-1546; Décret n°2021-434)



Germany - Occupational Exposure Limits (TRGS 900)	
Local name	Ammoniak
AGW (OEL TWA) [1]	14 mg/m³
AGW (OEL TWA) [2]	20 ppm
Peak exposure limitation factor	2(I)
Remark	DFG - Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe der DFG (MAK-Kommission); EU - Europäische Union (Von der EU wurde ein Luftgrenzwert festgelegt: Abweichungen bei Wert und Spitzenbegrenzung sind möglich); Y - Ein Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes (BGW) nicht befürchtet zu werden
Regulatory reference	TRGS900
Gibraltar - Occupational Exposure Limits	
Local name	Ammonia, anhydrous
OEL TWA	14 mg/m³
OEL TWA [ppm]	20 ppm
OEL STEL	36 mg/m³
OEL STEL [ppm]	50 ppm
Regulatory reference	Factories (Control of Chemical Agents at Work) Regulations 2003 (LN. 2018/181)
Greece - Occupational Exposure Limits	
Local name	Αμμωνία
OEL TWA	35 mg/m³
OEL TWA [ppm]	50 ppm
OEL STEL	35 mg/m³
OEL STEL [ppm]	50 ppm
Regulatory reference	Π.Δ. 90/1999 - Προστασία της υγείας των εργαζομένων που εκτίθενται σε ορισμένους χημικούς παράγοντες κατά τη διάρκεια της εργασίας τους
Hungary - Occupational Exposure Limits	
Local name	AMMÓNIA
AK (OEL TWA)	14 mg/m³
CK (OEL STEL)	36 mg/m³
Remark	m (maró hatású anyag, amely felmarja a bőrt, nyálkahártyát, szemet vagy mindhármat); EU1 (2000/39/EK irányelvben közölt érték); N (Irritáló anyagok, egyszerű fojtógázok, csekély egészségkárosító hatással bíró anyagok)
Regulatory reference	5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
Ireland - Occupational Exposure Limits	
Local name	Ammonia, anhydrous
OEL TWA [1]	14 mg/m³



OEL TWA [2]	20 ppm
OEL STEL	36 mg/m³
OEL STEL [ppm]	50 ppm
Remark	IOELV (Indicative Occupational Exposure Limit Values)
Regulatory reference	Chemical Agents Code of Practice 2020
Italy - Occupational Exposure Limits	
Local name	Ammoniaca anidra
OEL TWA	14 mg/m³
OEL TWA [ppm]	20 ppm
OEL STEL	36 mg/m³
OEL STEL [ppm]	50 ppm
Regulatory reference	Allegato XXXVIII del D.Lgs. 9 aprile 2008, n. 81 e s.m.i.
Latvia - Occupational Exposure Limits	
Local name	Amonjaks
OEL TWA	14 mg/m³
OEL TWA [ppm]	20 ppm
OEL STEL	36 mg/m³
OEL STEL [ppm]	50 ppm
Regulatory reference	Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325
Lithuania - Occupational Exposure Limits	
Local name	Amoniakas (bevandenis)
IPRV (OEL TWA)	14 mg/m³
IPRV (OEL TWA) [ppm]	20 ppm
TPRV (OEL STEL)	36 mg/m³
TPRV (OEL STEL) [ppm]	50 ppm
Regulatory reference	LIETUVOS HIGIENOS NORMA HN 23:2011 (Nr. V-695/A1-272, 2018-06-12)
Luxembourg - Occupational Exposure Limits	
Local name	Ammoniac anhydre
OEL TWA	14 mg/m³
OEL TWA [ppm]	20 ppm
OEL STEL	36 mg/m³
OEL STEL [ppm]	50 ppm
Regulatory reference	Mémorial A N° 684 de 2018 concernant la protection de la sécurité et de la santé des salariés contre les risques liés à des agents chimiques sur le lieu de travail
Malta - Occupational Exposure Limits	
Local name	Ammonia, anhydrous # Ammonia, anidru



OEL TWA	14 mg/m³
OEL TWA [ppm]	20 ppm
OEL STEL	36 mg/m³
OEL STEL [ppm]	50 ppm
Regulatory reference	S.L.424.24 - Chemical Agents at Work Regulations (L.N.57 of 2018)
Netherlands - Occupational Exposure Limits	
Local name	Ammoniak
TGG-8u (OEL TWA)	14 mg/m³
TGG-15min (OEL STEL)	36 mg/m³
Regulatory reference	Arbeidsomstandighedenregeling 2021
Poland - Occupational Exposure Limits	
Local name	Amoniak
NDS (OEL TWA)	14 mg/m³
NDSch (OEL STEL)	28 mg/m³
Regulatory reference	Dz. U. 2018 poz. 1286
Romania - Occupational Exposure Limits	
Local name	Amoniac
OEL TWA	14 mg/m³
OEL TWA [ppm]	20 ppm
OEL STEL	36 mg/m³
OEL STEL [ppm]	50 ppm
Regulatory reference	Hotărârea Guvernului nr. 1.218/2006 (Hotărârea nr. 53/2021)
Serbia - Occupational Exposure Limits	
Local name	амонијак, анхидровани
OEL TWA	14 mg/m³
OEL TWA [ppm]	20 ppm
OEL STEL	36 mg/m³
OEL STEL [ppm]	50 ppm
Remark	EU* – напомена да се ради о хемијским материјама за које су утврђене индикативне граничне вредности изложености према Директиви 2000/39/ЕЗ (прва листа); К – напомена да хемијска материја може штетно деловати на кожу
Regulatory reference	ПРАВИЛНИК о превентивним мерама за безбедан и здрав рад при излагању хемијским материјама („Службени гласник РС”, бр. 106/09 и 117/17)
Slovakia - Occupational Exposure Limits	
Local name	Amoniak
NPHV (OEL TWA) [1]	14 mg/m³
NPHV (OEL TWA) [2]	20 ppm



NPHV (OEL STEL)	36 mg/m³
NPHV (OEL STEL) [ppm]	50 ppm
Regulatory reference	Nariadenie vlády č. 355/2006 Z. z. (236/2020 Z. z.)
Slovenia - Occupational Exposure Limits	
Local name	amonijak, brezvodni
OEL TWA	14 mg/m³
OEL TWA [ppm]	20 ppm
OEL STEL	36 mg/m³
OEL STEL [ppm]	50 ppm
Remark	Y (Snovi, pri katerih ni nevarnosti za zarodek ob upoštevanju mejnih vrednosti in bat vrednosti), EU
Regulatory reference	Uradni list RS, št. 72/2021 z dne 11.5.2021
Sweden - Occupational Exposure Limits	
Local name	Ammoniak
NGV (OEL TWA)	14 mg/m³
NGV (OEL TWA) [ppm]	20 ppm
KTV (OEL STEL)	36 mg/m³
KTV (OEL STEL) [ppm]	50 ppm
Remark	2 (Korttidsgränsvärde som avser 5-minutersperiod gäller för ammoniak, diisocyanater, 2,6-diisopropylfenylisocyanat, fenylisocyanat, isocyansyra och metylisocyanat. Korttidsgränsvärde som avser 1-minuters-period gäller för akrylsyra)
Regulatory reference	Hygieniska gränsvärden (AFS 2018:1)
United Kingdom - Occupational Exposure Limits	
Local name	Ammonia, anhydrous
WEL TWA (OEL TWA) [1]	18 mg/m³
WEL TWA (OEL TWA) [2]	25 ppm
WEL STEL (OEL STEL)	25 mg/m³
WEL STEL (OEL STEL) [ppm]	35 ppm
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
Iceland - Occupational Exposure Limits	
Local name	Ammóníak
OEL TWA	14 mg/m³
OEL TWA [ppm]	20 ppm
OEL STEL	36 mg/m³ Þakgildið er miðað við fimm mínútna tímabil
OEL STEL [ppm]	50 ppm Þakgildið er miðað við fimm mínútna tímabil
Remark	H (efnið getur auðveldlega borist inn í líkamann gegnum húð)
Regulatory reference	Reglugerð um mengunarmörk og aðgerðir til að draga úr mengun á vinnustöðum (Nr. 390/2009)



Norway - Occupational Exposure Limits	
Local name	Ammoniakk
Grenseverdi (OEL TWA) [1]	11 mg/m³
Grenseverdi (OEL TWA) [2]	15 ppm 20 ppm For landbruket gjelder i en overgangsperiode (2013–2024) for husdyrproduksjon i eldre driftsbygninger (driftsbygninger oppført før år 2002)
Korttidsverdi (OEL STEL)	36 mg/m³
Korttidsverdi (OEL STEL) [ppm]	50 ppm
Remark	E: EU har en veiledende grenseverdi for stoffet.
Regulatory reference	FOR-2020-04-06-695
North Macedonia - Occupational Exposure Limits	
Local name	Амонијак, безводен
OEL TWA	14 mg/m³
OEL TWA [ppm]	20 ppm
KTV	2.5
Short time value [mg/m³]	35 mg/m³
Short time value [ppm]	50 ppm
Remark	(KTV) краткотрајна вредност (КТВ) значи концентрација на опасни хемиски супстанции во воздухот на работното место внатре во зона на дишење, на која работникот без опасност по здравјето може да е изложен на покосо време. Изложеноста на краткотрајни вредности може да трае највеќе 15 минути и не смее да се повтори повеќе од четирипати во работната смена, при што меѓу две изложености на оваа концентрација мора да измине најмалку 60 минути. Краткотрајната вредност е изразена во mg/m³ или во ml/m³(ppm) а е дадена како многукратни дозволени пречекорувања на граничната вредност; (EU) European Union – гранична вредност, определена на ниво на Европската унија
Regulatory reference	Правилник за минималните барања за безбедност и здравје при работа на вработени од ризици поврзани со изложување на хемиски супстанции („Службен весник на Република Македонија“ бр.46/10)
Switzerland - Occupational Exposure Limits	
Local name	Ammoniac / Ammoniak
MAK (OEL TWA) [1]	14 mg/m³
MAK (OEL TWA) [2]	20 ppm
KZGW (OEL STEL)	28 mg/m³
KZGW (OEL STEL) [ppm]	40 ppm
Critical toxicity	VRS, Yeux / OAW, Auge
Notation	SS _c / SS _c
Remark	NIOSH, OSHA
Regulatory reference	www.suva.ch, 01.01.2021



Turkey - Occupational Exposure Limits	
Local name	Amonyak
OEL TWA	14 mg/m³ (anhidrozo)
OEL TWA [ppm]	20 ppm (anhidrozo)
OEL STEL	36 mg/m³ (anhidrozo)
OEL STEL [ppm]	50 ppm (anhidrozo)
Regulatory reference	12 Ağustos 2013 Tarihli ve 28733 Sayılı Resmî Gazete

ammonia, anhydrous (7664-41-7)	
DNEL: Derived no effect level (Workers)	
Acute - local effects, inhalation	36 mg/m³
Acute - systemic effects, inhalation	47.6 mg/m³
Long-term - local effects, inhalation	14 mg/m³
Long-term - systemic effects, inhalation	47.6 mg/m³
Acute - systemic effects, dermal	6.8 mg/kg bw/day
Long-term - systemic effects, dermal	6.8 mg/kg bw/day

ammonia, anhydrous (7664-41-7)	
PNEC: Predicted no effect concentration	
Aqua (freshwater)	0.0011 mg/l
Aqua (marine water)	0.0011 mg/l

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Provide adequate general and local exhaust ventilation.
Systems under pressure should be regularly 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.
 - Skin protection
 - Hand protection
 - : Wear working gloves when handling gas containers.
Standard EN 388 - Protective gloves against mechanical risk.
 - Other
 - : Wear safety shoes while handling containers.
Standard EN ISO 20345 - Personal protective equipment - Safety footwear.



- Respiratory protection
 - : Recommended: Filter K (green).
 - 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.
 - Gas filters do not protect against oxygen deficiency.
 - Standard EN 14387 - Gas filter(s), combined filter(s) and standard EN136, full face masks .
 - Self contained breathing apparatus is recommended, where unknown exposure may be expected, e.g. during maintenance activities on installation systems.
- 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	: Mixture contains one or more component(s) which have the following colour(s): Colourless.
Odour	: There may be no odour warning properties, odour is subjective and inadequate to warn of overexposure. Mixture contains one or more component(s) which have the following odour: Ammoniacal. Odour threshold is subjective and inadequate to warn of overexposure.
pH	: Not applicable for gases and gas mixtures.
Melting point / Freezing point	: Not applicable for gases and gas mixtures.
Boiling point	: Not applicable for gas mixtures.
Flash point	: Not applicable for gases and gas mixtures.
Flammability	: Non flammable.
Explosive limits	: Non flammable.
Lower explosive limit (LEL)	: Not available
Upper explosive limit (UEL)	: Not available
Vapour pressure [20°C]	: Not applicable.
Vapour pressure [50°C]	: Not applicable.
Density	: Not applicable
Vapour density	: Not applicable for gases and gas mixtures.
Relative density, liquid (water=1)	: Not applicable
Relative density, gas (air=1)	: Lighter or similar to air.
Water solubility	: Not available
Partition coefficient n-octanol/water (Log Kow)	: Not applicable for gas mixtures.
Auto-ignition temperature	: Non flammable.
Decomposition temperature	: Not applicable.
Viscosity, kinematic	: Not applicable for gases and gas mixtures.
Particle characteristics	: Not applicable 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 mixture are not available.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Reactivity

None.

: This mixture contains components with the following reactivity : Can form explosive mixture with air. May react violently with oxidants.

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.

ammonia, anhydrous (7664-41-7)

LC50 Inhalation - Rat [ppm]	2000 ppm/4h
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Skin corrosion/irritation : Classification criteria are not met.

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 : No known effects from this product.

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.



ammonia, anhydrous (7664-41-7)	
EC50 48h - Daphnia magna [mg/l]	101 mg/l
EC50 72h - Algae [mg/l]	No data available.
LC50 96 h - Fish [mg/l]	0.89 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

The substance/mixture has no endocrine disrupting properties.

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 : No known effects from this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

May be vented to atmosphere in a well ventilated place.
Do not discharge into any place where its accumulation could be dangerous.
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 (ADR/RID)	: COMPRESSED GAS, N.O.S. (Nitrogen, ammonia, anhydrous)
Transport by air (ICAO-TI / IATA-DGR)	: Compressed gas, n.o.s. (Nitrogen, ammonia, anhydrous)
Transport by sea (IMDG)	: COMPRESSED GAS, N.O.S. (Nitrogen, ammonia, anhydrous)

14.3. Transport hazard class(es)

Labelling



2.2 : Non-flammable, non-toxic gases.

Transport by road/rail (ADR/RID)

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
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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 (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	: 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.
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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 on the REACH candidate list
Seveso Directive : 2012/18/EU (Seveso III) : Not covered.

National regulations

Water hazard class (WGK) : 1 - Slightly hazardous to water
ABM category : A(3) - hazardous for aquatic organisms, may have longterm hazardous effects in aquatic environment
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 Road
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

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 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

Acute Tox. 3 (Inhalation:gas)	Acute toxicity (inhalation:gas) Category 3
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1



Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Flam. Gas 2	Flammable gases, Category 2
H221	Flammable gas.
H280	Contains gas under pressure; may explode if heated.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
Press. Gas (Comp.)	Gases under pressure : Compressed gas
Press. Gas (Liq.)	Gases under pressure : Liquefied gas
Skin Corr. 1B	Skin corrosion/irritation, Category 1, Sub-Category 1B

DISCLAIMER OF LIABILITY

: 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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