	SAFETY DATASHEET	Page : 1/12
		Revised edition n° : 10.0
		Revision date : 11/2022
Nitrogen 50% - ammonia 50%		MTG002

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

1.1. Product identifier

Trade name	Mixture nitrogen 50% - ammonia 50%
Chemical description	Nitrogen 50% - ammonia 50%
CAS N°	-
CE N°	-
Index N°	-
Registration n°	-
Chemical formula	N ₂ , NH ₃

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

Relevant identified uses	Industrial and professional Chemical analysis, calibration, quality control (routine) Laboratory Contact supplier for more information on uses
Uses advised against	Consumer use not recommended

1.3. Details of the supplier of the safety data sheet

Company identification	MULTIGAS Route de l'Industrie 102 CH-1564 Domdidier
Phone number	+41 (0) 26 676 94 94
E-mail address	info@multigas.ch

1.4. Emergency telephone numbers


Switzerland	145 (Toxicology Centre Zurich) or +41 (0) 44 251 51 51 +41 (0) 26 676 94 94 (Multigas)
--------------------	---

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Flammable gases, Category 2	H221
Gases under pressure : Liquefied gas	H280
Skin corrosion/irritation, Category 1B	H314


	SAFETY DATASHEET	Page : 2/12
		Revised edition n° : 10.0
		Revision date : 11/2022
Nitrogen 50% - ammonia 50%		MTG002

Severe eye damage - Category 1	H318
Acute toxicity (inhalation: gas) Category 4	H332
Specific target organ toxicity - single exposure	H335
Hazardous to the aquatic environment — Acute Hazard, Category 1	H400
Hazardous to the aquatic environment, chronic Hazard, Category 2	H411

For the complete H-sentences texts mentioned in that chapter, refer to Section 16

2.2. Label elements

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

Hazard pictograms	    
	GHS02 GHS04 GHS05 GHS07 GHS09

Signal word


Danger

Hazard statements

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
H332	Harmful if inhaled
H335	May cause respiratory irritation
H400	Very toxic to aquatic life
H411	Toxic to aquatic life with long lasting effects
EUH071	Corrosive to the respiratory tract

Precautionary statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P260	Do not breathe gas, vapours
P273	Avoid release to the environment
P280	Wear protective gloves, protective clothing, eye protection, face protection
P303+P361+P353+P315	IF ON SKIN: (or hair) Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Get immediate medical advice / attention
P304+P340+P315	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical advice / attention

	SAFETY DATASHEET	Page : 3/12
		Revised edition n° : 10.0
		Revision date : 11/2022
Nitrogen 50% - ammonia 50%		MTG002

P305+P351+P338+P315	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice / attention
P377	Leaking gas fire: Do not extinguish, unless leak can be stopped safely
P381	In case of leakage, eliminate all ignition sources
P410+P403	Protect from sunlight. Store in a well-ventilated place
P405	Store locked up

2.3. Other hazards

Liquid contact with boiling may cause frostbite or freezing of the skin

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	Concentration	Classification
Anhydrous ammonia	(CAS-No.) 7664-41-7 (EC-No.) 231-635-3 (EC Index-No.) 007-001-00-5 (Registration-No.) 01-2119488876-14	50%	Flam. Gas 2, H221 Press. Gas (Liq.), H280 Acute Tox. 3 (Inhalation: gas), H331 Skin Corr. 1B, H314 Eye Dam. 1, H318 Aquatic Acute 1, H400 Aquatic Chronic 2, H411
Nitrogen	(CAS-No.) 7727-37-9 (EC-No.) 231-783-9 (EC Index-No.) --- (Registration-No.) --	50%	Press. Gas (Comp.), H280

For the complete H-sentences texts mentioned in that chapter, refer to Section 16

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

3.2. Mixtures

Not established

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice	See a doctor. Show this safety data sheet to the attending physician
In case of inhalation	In case of inhalation, remove the person from the contaminated area. In case of respiratory arrest, give artificial respiration. See a doctor
In case of skin contact	Remove contaminated clothing and shoes immediately. Wash with soap and plenty of water. Take victim immediately to hospital. See a doctor
In case of eyes contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a doctor

Nitrogen 50% - ammonia 50%

MTG002

In case of ingestion

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. See a doctor

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

The main known symptoms and effects are described on the labelling (see section 2.2) and / or section 11

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

Causes severe skin burns and eye damage. Contact with the liquefied gas can cause injury (frostbite) due to rapid cooling by evaporation. May be fatal if inhaled

Thaw the frozen parts with lukewarm water. Do not rub the affected areas. Seek immediate medical attention. Treat with a corticosteroid spray as soon as possible after inhalation

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Water spray or water mist. Dry powder. Foam

Unsuitable extinguishing media

Carbone dioxide
 Do not use water jet to extinguish

5.2. Special hazards arising from the substance or mixture

Specific hazards

In case of fire or excessive heat, hazardous combustion products may be produced
 Exposure to fire may cause containers to rupture/explode

Hazardous combustion products

In case of fire or excessive heat, hazardous combustion products may be produced such as : Nitric oxide/nitrogen dioxide

5.3. Additional information

Cool endangered receptacles with water spray jet from a protected position

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid breathing vapours, spray mists or gases
 Provide adequate ventilation
 Remove all sources of ignition
 Evacuate the staff to a safe place
 Beware of vapours that accumulate forming explosive concentrations
 Vapours may accumulate in low areas
 Personal protective equipment, see section 8

Nitrogen 50% - ammonia 50%

MTG002

6.2. Environmental precautions

Avoid further spills or leaks, if it is safely possible

6.3. Methods and material for containment and cleaning up

Ventilate the area
 Keep the area clear of all sources of ignition until all spilled liquid has evaporated (frost-free soil)

6.4. Reference to other sections

See also sections 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid contact with skin and eyes
 Avoid breathing vapour or mist
 Keep away from sources of ignition - No smoking
 Take measures to prevent the accumulation of electrostatic charges
 For precautions, see section 2.2

7.2. Conditions for safe storage, including any incompatibilities

Store in a cool place. Keep container tightly closed in a dry and well-ventilated place
 Content under pressure

7.3. Specific end use(s)


None

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Components with occupational exposure limits

Component	CAS N°	Exposure value type	Control parameter	Source
Anhydrous ammonia	7664-41-7	TWA	20 ppm	SUVA: Occupational Exposure Limit Values (2017)
			14 mg/m ³	
		OEL	40 ppm	SUVA: Occupational Exposure Limit Values (2017)
			28 mg/m ³	
Nitrogen	7727-37-9	TWA	-	No occupational exposure limit value
			-	
		OEL	-	No occupational exposure limit value
			-	

	SAFETY DATASHEET	Page : 6/12
		Revised edition n° : 10.0
		Revision date : 11/2022
Nitrogen 50% - ammonia 50%		MTG002

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Provide adequate general and local exhaust ventilation
 Gas detectors should be used when flammable / toxic gases / vapours are likely to be released

8.2.2. Individual protection measures, e.g. personal protective equipment

Eye/face protection

Safety glasses with full protection. Screen protection (20 cm minimum)
 Use eye protection equipment that has been tested and approved in accordance with applicable government standards, such as NIOSH (US) or EN 166 (EU)

Skin / hand protection

Wear protective gloves when handling gas cylinders - Standard EN 388- Protective gloves against mechanical hazards
 The selected protective gloves have to satisfy the specifications of EU Directive 89/686 / EEC and the standard EN 374 derived from it

Full contact

Material: butyl-rubber
 Minimum layer thickness: 0,3 mm
 Break through time: 480 min

Splash contact

Material: butyl-rubber
 Minimum layer thickness: 0,3 mm
 Break through time: 480 min

Have appropriate, chemical-resistant protective clothing ready for use in emergencies

Respiratory protection

Self-contained breathing apparatus (SCBA) or positive pressure air mask must be used in oxygenated atmospheres. Standard EN 137 - Self-contained compressed air device with a full face mask

8.2.3. Environmental exposure controls

-

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 Ammoniacal

Odour threshold Data not available

pH Data not available

Melting point / Freezing point Data not available

Nitrogen 50% - ammonia 50%
MTG002

Boiling point	Data not available
Flash point	Data not available
Evaporation rate	Data not available
Flammability (solid, gas)	Flammable gas
Explosive limits	Data not available
Vapour pressure [20°C]	Data not available
Vapour pressure [50°C]	Data not available
Vapour density	Data not available
Relative density, liquid (water=1)	Data not available
Relative density, gas (air=1)	0.777
Water solubility	Data not available
Partition coefficient n-octanol/water (Log Kow)	Data not available
Auto-ignition temperature	Data not available
Decomposition temperature	Data not available
Viscosity	Data not available
Explosive properties	Data not available
Oxidising properties	Data not available

9.2. Other information

Molar mass	22.5 g/mol
Critical temperature [°C]	Data not available
Relative vapour density	0.777 Lower or close to air

SECTION 10: Stability and reactivity
10.1. Reactivity

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

10.2. Chemical stability


Stable under the recommended storage conditions

10.3. Possibility of hazardous reactions

Data not available

10.4. Conditions to avoid

Keep away from heat / sparks / open flames / hot surfaces

	SAFETY DATASHEET	Page : 8/12
		Revised edition n° : 10.0
		Revision date : 11/2022
Nitrogen 50% - ammonia 50%		MTG002

10.5. Incompatible materials

Oxidants, Iron, Zinc, Copper, Silver / Silver Oxides, Cadmium / Cadmium Oxides, Alcohols, Acids, Halogens, Aldehydes
 For additional information on compatibility refer to ISO 11114

10.6. Hazardous decomposition products

Hazardous decomposition products are formed under fire conditions. - Nitrogen oxides (NO_x)

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	Toxic if inhaled Inhalation of large amounts leads to bronchospasm, laryngeal oedema and pseudo membrane formation
Skin corrosion/irritation	Causes severe skin burns and eye damage
Serious eye damage/irritation	Causes serious eye damage
Respiratory or skin sensitisation	Data not available
Germ cell mutagenicity	Data not available
Carcinogenicity	Data not available
Reproductive toxicity	Data not available
STOT-single exposure – Target organ(s)	Severe corrosion to the respiratory tract at high concentrations May cause inflammation of the respiratory system Respiratory tract
STOT-repeated exposure	Data not available
Ingestion hazard	Data not available

SECTION 12: Ecological information

12.1. Toxicity


Assessment	Very toxic to aquatic life. Toxic to aquatic life with long lasting effects
-------------------	--

12.2. Persistence and degradability

The substance is readily biodegradable. Unlikely to persist

12.3. Bioaccumulative potential

Data not available

	SAFETY DATASHEET	Page : 9/12
		Revised edition n° : 10.0
		Revision date : 11/2022
Nitrogen 50% - ammonia 50%		MTG002

12.4. Mobility in soil

Data not available

12.5. Results of PBT and vPvB assessment

PBT / vPvB assessment is not available because the chemical safety assessment is not required / is not conducted

12.6. Other adverse effects

Very toxic to aquatic life with long lasting effects

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product	<p>Must not be released into the atmosphere</p> <p>Burn in a chemical incinerator equipped with an afterburner and scrubber</p> <p>Return to the supplier the product not consumed in its original container</p>
Contaminated container	<p>Eliminate as unused product</p> <p>Contact the supplier if instructions are needed</p>
OMoD Code	<p>16 05 04</p> <p>Gases in pressure containers containing dangerous substances</p>

SECTION 14: Transport information

14.1. UN number

Transport by road/rail ADR / RID	Transport by sea IMDG	Transport by air IATA
1954	1954	1954

14.2. UN proper shipping name

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


14.3. Transport hazard class(es)

Labelling



ADR/RID
IMDG
IATA

2.1
Flammable gas

	SAFETY DATASHEET	Page : 10/12
		Revised edition n° : 10.0
		Revision date : 11/2022
Nitrogen 50% - ammonia 50%		MTG002

14.4. Packing group

ADR/RID
IMDG
IATA

Not established

14.5. Environmental hazards

ADR/RID

Environmentally hazardous substance / mixture

IMDG

Marine pollutant

ICAO-TI / IATA-DGR

Environmentally hazardous substance / mixture

14.6. Special precautions for user

Data not available

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

This safety data sheet complies with the requirements of Regulation (CE) No. 1907/2006

15.2. Chemical safety assessment

A CSA has been carried out

SECTION 16: Other information

Indication of changes

Revised safety data sheet in accordance with commission regulation (EU) No 2015/830

Abbreviations and acronyms

ADR : European Agreement concerning the International Carriage of Dangerous Goods by Road

CAS : Chemical Abstract Service number (USA)

CLP : Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008

CSA : Chemical Safety Assessment

EIGA : European Industrial Gases Association

EINECS : European Inventory of Existing Commercial Chemical Substances


EN : European Standard

ATE : Acute Toxicity Estimate

IATA : International Air Transport Association

IMDG Code : International Maritime Dangerous Goods Code

LC50 : Lethal Concentration to 50 % of a test population

	SAFETY DATASHEET	Page : 11/12
		Revised edition n° : 10.0
		Revision date : 11/2022
Nitrogen 50% - ammonia 50%		MTG002

OMoD :	Swiss Ordinance on the movement of waste
PBT :	Persistent, Bioaccumulative and Toxic
PPE:	Personal Protection Equipment
REACH :	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID :	Regulations concerning the international carriage of dangerous goods by rail
RMM :	Risk Management Measures
STOT-SE :	Specific Target Organ Toxicity - Single Exposure
UN :	United Nations
vPvB :	Very Persistent and Very Bioaccumulative
WGK:	Water Hazards Class


Full text of H, EUH and P statements used in sections 2 and 3

Hazard statements

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
H332	Harmful if inhaled
H335	May cause respiratory irritation
H400	Very toxic to aquatic life
H411	Toxic to aquatic life with long lasting effects
EUH071	Corrosive to the respiratory tract

Precautionary statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P260	Do not breathe gas, vapours
P273	Avoid release to the environment
P280	Wear protective gloves, protective clothing, eye protection, face protection
P303+P361+P353+P315	IF ON SKIN: (or hair) Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Get immediate medical advice / attention
P304+P340+P315	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical advice / attention
P305+P351+P338+P315	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice / attention
P377	Leaking gas fire: Do not extinguish, unless leak can be stopped safely
P381	In case of leakage, eliminate all ignition sources
P410+P403	Protect from sunlight. Store in a well-ventilated place

	SAFETY DATASHEET	Page : 12/12
		Revised edition n° : 10.0
		Revision date : 11/2022
Nitrogen 50% - ammonia 50%		MTG002

P405

Store locked up

Disclaimer of liability

Details given in this document have been prepared based on the most available reliable documents and are believed to be correct at the time of going to press

They do not claim to be exhaustive and should be considered as a guide