SAMPLE Hydrogen chloride, anhydrous 99.8 %

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

1.1. Product identifier

Product name	**SAMPLE Hydrogen chloride, anhydrous 99.8 %**
Product code	SAMPLE-HCL-998

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

Identified use	Industrial use as a chemical intermediate and process gas (sample product for illustration).
Uses advised against	Uses other than those recommended.

1.3. Details of the supplier of the safety data sheet

Manufacturer	Example Chemicals Ltd.
Address	12 Sample Street, D02 X000 Dublin, Ireland
Phone	+353 1 000 0000
E-mail	sds@example.com
Website	www.example.com
Person responsible for SDS	Example Chemicals Ltd.
E-mail	sds@example.com

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1.4. Emergency telephone number

Emergency telephone number: +353 1 809 2166

Emergency information: National Poisons Information Centre, Beaumont Hospital, Dublin: Public line +353 1 809 2166 (8am-10pm, 7 days); Healthcare professionals +353 1 809 2566 (24 hours)

Operating hours: Public 08:00-22:00 daily; HCP line 24/7

2 SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Press. Gas H280

Skin Corr. 1A, H314

Acute Tox. 3, H331

Most important health and environmental effects:

Toxic if inhaled.

Causes severe skin burns and eye damage.

2.2. Label elements

Hazard pictograms:



Signal word: **Danger**

Hazard statements:

H280 Contains gas under pressure; may explode if heated.
H314 Causes severe skin burns and eye damage.

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H331	Toxic if inhaled.

Precautionary statements:

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor/ ....
P410+P403	Protect from sunlight. Store in a well-ventilated place.

Hazardous substances:

Hydrogen chloride

2.3. Other hazards

The substance does not meet the criteria for persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) substances (Regulation (EC) No 1907/2006, Annex XIII).

The substance is not identified as having endocrine disrupting properties according to the criteria of Regulation (EU) 2017/2100 or (EU) 2018/605.

The substance does not meet the criteria for persistent, mobile and toxic (PMT) or very persistent and very mobile (vPvM) substances (Regulation (EC) No 1272/2008, Annex I).

The substance is not identified as having endocrine disrupting properties for the environment according to the criteria of Regulation (EU) 2017/2100 or (EU) 2018/605.

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SAMPLE Hydrogen chloride, anhydrous 99.8 %

3 SECTION 3: Composition/information on ingredients

3.1. Substances

Hydrogen chloride

Identification numbers	Substance name	Concentration (w/w %)	Classification	Specific concentration limits, M-factors, ATE	Notes
CAS: 7647-01-0 EC: 231-595-7 Index: 017-002-00-2	Hydrogen chloride	99.8 - 100	Press. Gas, H280 Acute Tox. 3, H331 Skin Corr. 1A, H314	Skin Irrit. 2; H315: 10 % <= C < 25 % Eye Irrit. 2; H319: 10 % <= C < 25 % STOT SE 3; H335: 10 % <= C < 25 % Skin Corr. 1B; H314: C >= 25 %	5, U

Meaning of the notes shown in the table (CLP Annex VI):

Note 5: The concentration limits for gaseous mixtures are expressed as percent by volume.

Note U: Before being placed on the market, gases shall be classified as "Explosive gases (Category 1)", "Chemically unstable gases (Category A)", "Chemically unstable gases (Category B)", "Flammable gases (Category 1)", "Flammable gases (Category 2)", "Oxidising gases (Category 1)" and/or "Gases under pressure", as appropriate, depending on the physical state.

Full text of all classifications and standard hazard statements can be found in section 16.

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4 SECTION 4: First aid measures

4.1. Description of first aid measures

General information: First aiders must be protected with appropriate personal protective equipment. In case of doubt or persistent symptoms, seek medical attention. Show the data sheet or label to the physician. The affected person must not be left unattended. In case of unconsciousness: place in the recovery position. In case of vomiting, keep the head low so that vomit does not enter the airways. In case of respiratory arrest, apply artificial respiration. Mouth-to-mouth resuscitation is PROHIBITED in case of ingestion or inhalation of toxic substances.

If inhaled: Move person to fresh air and keep in a position comfortable for breathing. Medical attention required.

If on skin: Remove contaminated clothing immediately. Rinse skin with running water for at least 15-20 minutes. Immediate medical attention.

If in eyes: Immediately rinse with plenty of water, keeping eyelids open, for at least 15-20 minutes. Remove contact lenses. Immediate medical attention required.

If swallowed: Rinse mouth with water. Seek medical attention.

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

If inhaled: Toxic if inhaled.

If on skin: Causes severe skin burns.

If in eyes: Causes serious eye damage.

If swallowed: No symptoms expected.

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

Medical attention: Toxic if inhaled. If exposed: Call a POISON CENTER or doctor. Specific treatment is required. No specific antidote is known. Symptomatic treatment is recommended. Show the safety data sheet or the label to the doctor. If necessary, call the POISON CENTER or consult a doctor.

5 SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Dry powder, carbon dioxide (CO_2), foam, water spray. Take fire-fighting measures appropriate to the local conditions and the surrounding environment.

Unsuitable extinguishing media: For safety reasons, do not use full water jet for firefighting as it may cause the fire to spread.

5.2. Special hazards arising from the substance or mixture

Toxic vapours and decomposition products may form in fire. Corrosive vapours and fumes may form in fire. Containers exposed to fire may explode (BLEVE). Toxic and/or irritating vapours and gases may form in case of fire. Thermal decomposition products: Corrosive fumes, hydrogen chloride (HCl) or other hydrogen halides. Carbon monoxide (CO), carbon dioxide (CO_2).

5.3. Advice for firefighters

Firefighters must wear self-contained breathing apparatus (EN 137) and heat-resistant full protective equipment (EN 469). Cool containers exposed to fire with water spray from a safe distance. Evacuate the danger zone. Only trained personnel should fight the fire.

Collect contaminated extinguishing water and dispose of it in accordance with environmental regulations. Do not allow to enter drains or watercourses. DO NOT inhale smoke! Move upwind of the fire. Extinguishing water must not be discharged directly into

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drains as it may cause environmental contamination.

6 SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Do not touch or walk through spilled material. Avoid breathing gas. Ensure adequate ventilation. Use personal protective equipment (see Section 8). Remove unauthorised persons from the area. If necessary, wear self-contained breathing apparatus (SCBA) and full chemical protective clothing.

6.2. Environmental precautions

Stop the leak if this can be done without risk. Prevent release to the environment. Collect spilled product in a closed container. Treat as hazardous waste. Prevent entry of spilled material into watercourses, drains or soil.

6.3. Methods and material for containment and cleaning up

In case of small spill: absorb with inert material (sand, vermiculite, diatomaceous earth) and place in a closed container.

In case of large spill: prevent spread of spilled material. Block drains and gullies.

Absorb spilled liquid with inert material (e.g. sand, vermiculite). Collect contaminated material in suitable containers for disposal.

The contaminated area must be rinsed with plenty of water. The contaminated wash water must be collected and must not be discharged into drains, surface water or groundwater. The collected wash water must be handed over to an authorized waste handler in accordance with applicable waste management regulations.

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6.4. Reference to other sections

For personal protective equipment, see Section 8. For disposal, see Section 13.

7 SECTION 7: Handling and storage

7.1. Precautions for safe handling

General occupational health and safety measures for handling chemicals must be observed. Do not eat, drink or smoke in the workplace.

7.2. Conditions for safe storage, including any incompatibilities

Store in original packaging, tightly closed, in a dry, cool and well-ventilated place. Protect from direct sunlight.

7.3. Specific end use(s)

See section 1.2.

8 SECTION 8: Exposure controls/personal protection

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8.1. Control parameters

Components with workplace control parameters (according to national regulations):

EU		2000/39/EC
Substance name:	**Type**	**Value**
Hydrogen chloride (CAS: 7647-01-0)	TWA	8 mg/m³ (5 ppm)

DNEL values:

No data available.

PNEC values:

No data available.

Monitoring procedures: Workplace exposure should be monitored - where necessary - taking into account the conditions of use and the applicable exposure limit values. The standards EN 689 and EN 482 may be applied for measuring airborne contaminants.

8.2. Exposure controls

Appropriate engineering controls: Ensure adequate ventilation. Where ventilation is insufficient, apply local exhaust ventilation.

General protective and hygiene measures: Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing must not be taken out of the workplace. Avoid contact with skin, eyes and clothing.

Eye/face protection: Face shield according to EN 166. Full face protection required.

Skin protection

a) Hand protection: Gloves must comply with EN 374. The glove material must be impermeable and resistant to chemicals. When selecting glove material, consider breakthrough time, permeation rate and degradation. Consult the glove supplier for advice. Replace gloves if damaged or punctured.

b) Body protection: Chemical-resistant protective clothing according to EN 14605 (Type 3 or 4). Protective boots.

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Respiratory protection: In case of inadequate ventilation or in confined spaces, use a self-contained breathing apparatus (SCBA) conforming to EN 137, or a respirator equipped with an appropriate combined filter conforming to EN 14387. The appropriate respiratory protection shall be selected based on the risk assessment.

Environmental exposure controls: Prevent release to the environment. Observe applicable local environmental regulations. Do not allow to enter drains, sewers or watercourses.

9 SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

a) Physical state	gas (liquefied under pressure)
b) Colour	colourless
c) Odour	pungent
d) Melting point/freezing point (°C)	-114 °C
e) Boiling point or initial boiling point and boiling range (°C)	-85 °C
f) Flammability	not determined
g) Upper and lower explosive limits	not determined
h) Flash point (°C)	not applicable (gas)
i) Auto-ignition temperature (°C)	not determined
j) Decomposition temperature (°C)	not determined
k) pH	Not applicable
l) Kinematic viscosity	not determined
m) Solubility	720 g/l (20 °C)
n) Partition coefficient: n-octanol/water (log value)	not determined
o) Vapour pressure	not determined
p) Density and/or relative density	not determined
q) Relative vapour density	1.27 (air = 1)
r) Particle characteristics	not determined

Not determined / no data available / not relevant: The manufacturer has not conducted

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tests for the parameter concerned for this product, or the test results are not available at the time of issuing the safety data sheet, or it is not relevant due to the nature of the product.

9.2. Other information

No further relevant information.

10 SECTION 10: Stability and reactivity

10.1. Reactivity

The product is stable under the recommended storage and use conditions.

10.2. Chemical stability

The product is stable under the recommended storage and use conditions.

10.3. Possibility of hazardous reactions

No hazardous reactions are known under normal storage and use conditions.

10.4. Conditions to avoid

Extreme temperatures, direct sunlight, moisture.

10.5. Incompatible materials

Strong oxidisers, strong acids, strong bases.

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10.6. Hazardous decomposition products

No hazardous decomposition products are formed under the recommended storage and use conditions.

11 SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity:

Toxic if inhaled.

Hydrogen chloride (CAS: 7647-01-0)				
Parameter	**Route**	**Species**	**Result**	**Notes**
Conversion value	inhalation — gases		700 ppmV	Converted value per CLP Annex I, Table 3.1.2 (not an actual ATE/LD50)

Estimated/calculated acute toxicity value (ATE):

Route	Result
Inhalative	700 ppmV

Skin corrosion/irritation:

Causes severe skin burns.

Serious eye damage/eye irritation:

Causes serious eye damage.

Respiratory/skin sensitisation:

Based on available data, the classification criteria are not met.

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Germ cell mutagenicity:

Based on available data, the classification criteria are not met.

Carcinogenicity:

Based on available data, the classification criteria are not met.

Reproductive toxicity:

Based on available data, the classification criteria are not met.

STOT - single exposure:

Based on available data, the classification criteria are not met.

STOT - repeated exposure:

Based on available data, the classification criteria are not met.

Aspiration hazard:

Based on available data, the classification criteria are not met.

Additional data:

The above classification is based on the harmonised classification of Regulation (EC) No 1272/2008, Annex VI, where applicable, and on available data on the substance.

11.2. Information on other hazards

Endocrine disrupting properties:

The substance is not identified as having endocrine disrupting properties according to the criteria of Regulation (EU) 2017/2100 or (EU) 2018/605.

Other information:

Classification is based on available toxicological data on the substance and the criteria of Regulation (EC) No 1272/2008.

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12 SECTION 12: Ecological information

12.1. Toxicity

Ecological information is based on available data on the substance.

Based on available data, the classification criteria are not met.

Based on available data, the substance is not classified as hazardous to the aquatic environment.

12.2. Persistence and degradability

Persistence and degradability: Insufficient data for assessment of degradability.

12.3. Bioaccumulative potential

Bioaccumulative potential: Insufficient data for assessment of bioaccumulation.

12.4. Mobility in soil

The substance does not meet the criteria for persistent, mobile and toxic (PMT) or very persistent and very mobile (vPvM) substances (Regulation (EC) No 1272/2008, Annex I).

12.5. Results of PBT and vPvB assessment

The substance does not meet the criteria for persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) substances (Regulation (EC) No 1907/2006, Annex XIII).

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12.6. Endocrine disrupting properties

The substance is not identified as having endocrine disrupting properties for the environment according to the criteria of Regulation (EU) 2017/2100 or (EU) 2018/605.

12.7. Other adverse effects

Other adverse effects: Based on available data, no other adverse environmental effects are expected.

13 SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste generation should be avoided or minimised wherever possible.

Product residue: dispose of in accordance with applicable local, regional, national and international regulations. Incineration or landfill should only be considered when recycling is not feasible.

Packaging: empty containers should be collected for recycling, or handed over to an authorised waste management organisation for disposal.

Waste codes should be assigned by the user based on the application for which the product was used.

Legal regulations on waste:

EU regulations:

- Directive 2008/98/EC on waste
- Decision 2014/955/EU on the list of waste
- Regulation (EU) 2025/40 on packaging and packaging waste

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14 SECTION 14: Transport information

14.1. UN number or ID number

UN number: UN 1050

14.2. UN proper shipping name

HYDROGEN CHLORIDE, ANHYDROUS

14.3. Transport hazard class(es)

Class: 2.3

Subsidiary risks: 8

14.4. Packing group

14.5. Environmental hazards

Environmental hazard: No

Marine pollutant: No

14.6. Special precautions for user

Compliance with transport regulations is mandatory. The transport vehicle must be marked in accordance with ADR requirements. The designated hazard label(s) must be applied. Transport in a closed, well-ventilated vehicle.

14.7. Maritime transport in bulk according to IMO instruments

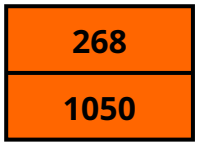
Not applicable

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Supplementary information

Hazard identification numbers	268
UN number	UN 1050
Classification code	2TC
Labels	6.1



Road transport

Class	2.3
Classification code	2TC
Labels	6.1
Hazard identification number	268
Limited quantity	0
Excepted quantity	E0
Transport category	1
Tunnel restriction code	(C/D)

Packaging

Packing instructions	P200

Portable tank and bulk container

Instructions	(M)

ADR tank

Tank code	PxBH(M)
Vehicle type for tank transport	AT
Transport category	1
Tunnel restriction code	(C/D)

Rail transport - RID

Class	2.3
Classification code	2TC
Limited quantity	0
Excepted quantity	E0
Tank code	PxBH(M)
Transport category	1

Packaging

Packing instructions	P200

Air transport ICAO/IATA

Class	2.3
Labels	2.3+8
Special provisions	Forbidden on passenger and cargo aircraft.

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Sea transport - IMDG

Class	2.3
Labels	2.3+8
Limited quantity	0
Excepted quantity	E0
Packing instructions	P200
Marine pollutant	No

Inland waterway transport - ADN

Class	2.3
Classification code	2TC

15 SECTION 15: Regulatory information

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

Chemical safety:

- Regulation (EC) No 1907/2006 of the European Parliament and of the Council (REACH) Concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
- Commission Regulation (EU) 2020/878 On the format of safety data sheets (amendment to REACH Annex II)
- Regulation (EC) No 1272/2008 of the European Parliament and of the Council (CLP) On classification, labelling and packaging of substances and mixtures
- S.I. No. 116/2012 European Communities (REACH) Enforcement Regulations

Occupational safety:

- Regulation (EU) 2016/425 on personal protective equipment
- 2004/37/EC Directive on the protection of workers from risks related to exposure to carcinogens or mutagens at work
- S.I. No. 619/2010 Chemical Agents Regulations Irish regulations implementing the

SAMPLE NOT VALID

chemical agents directive

Hazardous waste:

- Directive 2008/98/EC of the European Parliament and of the Council on waste (Waste Framework Directive)
- Commission Decision 2014/955/EU amending Decision 2000/532/EC on the list of waste (European List of Waste)
- Waste Management Act 1996 (as amended)

Transport:

- ADR 2025 - European Agreement concerning the International Carriage of Dangerous Goods by Road

Other:

- REACH Annex XIV: Does not contain substance(s) listed in Annex XIV of REACH at a concentration equal to or greater than 0.1%.
- REACH SVHC: Does not contain SVHC or substance(s) on the REACH Candidate List at a concentration equal to or greater than 0.1%.
- PIC Regulation (Prior Informed Consent): Does not contain substance(s) on the PIC list (Regulation (EU) No 649/2012 on the export and import of hazardous chemicals) at a concentration equal to or greater than 0.1%.
- POP Regulation (Persistent Organic Pollutants): Does not contain substance(s) on the POP list at a concentration equal to or greater than 0.1% (Regulation (EU) 2019/1021 on persistent organic pollutants).
- Regulation (EU) 2024/590 of the European Parliament and of the Council of 7 February 2024 on substances that deplete the ozone layer and repealing Regulation (EC) No 1005/2009: Does not contain substance(s) listed in the EU regulation on ozone-depleting substances at a concentration equal to or greater than 0.1%.
- Regulation on explosives precursors (2019/1148): Does not contain substance(s) on the list of explosives precursors at a concentration equal to or greater than 0.1% (Regulation (EU) 2019/1148 on the marketing and use of explosives precursors).
- Regulation on drug precursors: Contains substance(s) on the list of drug precursors

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at a concentration equal to or greater than 0.1% (Regulation (EC) No 273/2004): - Hydrogen chloride (CAS: 7647-01-0) Drug precursor - Category 3 substance under Regulation (EC) No 273/2004 (Annex I).

- The substance is not included in the EU list of endocrine disruptors.
- Directive 2012/18/EU (SEVESO III) may apply to this product. Check threshold quantities.
- REACH Annex XVII (Restriction List): does not contain substance(s) listed in Annex XVII of REACH at a concentration equal to or greater than 0.1%.

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out for this substance by the supplier.

16 SECTION 16: Other information

Explanation of abbreviations used in the safety data sheet:

Acute Tox.	Acute toxicity
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
Asp. Tox.	Aspiration toxicity
ATE	Acute Toxicity Estimate
Aquatic Acute	Hazardous to the aquatic environment (acute)
Aquatic Chronic	Hazardous to the aquatic environment (chronic)
BCF	Bioconcentration Factor
Carc.	Carcinogenicity
CAS No.	Chemical Abstracts Service identification number for chemical substances
EC No.	European Community identification number
EmS	Emergency procedures for ships carrying dangerous goods
Eye Dam.	Serious eye damage

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Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquid
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
IMO	International Maritime Organization
INCI	International Nomenclature of Cosmetic Ingredients
ISO	International Organization for Standardization
LC_{50}	Lethal Concentration that kills 50% of test organisms
LD_{50}	Lethal Dose that kills 50% of test organisms
log Kow	Partition coefficient: n-octanol/water
Met. Corr.	Substance or mixture corrosive to metals
Muta.	Germ cell mutagenicity
NOEC	No Observed Effect Concentration
OEL	Occupational Exposure Limit
PBT	Persistent, Bioaccumulative and Toxic
PMT	Persistent, Mobile and Toxic
Repr.	Reproductive toxicity
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
Skin Corr.	Skin corrosion
Skin Irrit.	Skin irritation
Skin Sens.	Skin sensitisation
STOT RE	Specific Target Organ Toxicity – Repeated Exposure
STOT SE	Specific Target Organ Toxicity – Single Exposure
UN No.	Four-digit UN identification number for substances and articles
UVCB	Substances of Unknown or Variable composition, Complex reaction products or Biological materials
VOC	Volatile Organic Compound
vPvB	very Persistent and very Bioaccumulative
vPvM	very Persistent and very Mobile

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SAMPLE Hydrogen chloride, anhydrous 99.8 %

Sources of information used in compiling the safety data sheet:

- Data from the product manufacturer
- Data from the manufacturers of raw materials used in product manufacturing
- Data available on the ECHA website (registration data, classification and labelling data) in the ECHA CHEM database (chem.echa.europa.eu)
- Annex VI of Regulation (EC) No 1272/2008 (CLP) on classification, labelling and packaging of substances and mixtures (Harmonised classification and labelling of hazardous substances)

Classification procedure:

The classification was performed by applying the classification criteria set out in Annex I of Regulation (EC) No 1272/2008.

List of hazard statements used in the safety data sheet:

H280	Contains gas under pressure; may explode if heated.
H314	Causes severe skin burns and eye damage.
H331	Toxic if inhaled.

Training advice:

Workers must be provided with training on the intended and recommended use of the product, the mandatory use of personal protective equipment, first aid procedures, and any contraindicated or prohibited methods of use.

Other safety information:

The user is responsible for compliance with health protection regulations related to the product.

Disclaimer:

The compiler of the safety data sheet and the company making it available do not know the actual conditions of use and handling of the product, and therefore cannot be held liable for any damages, losses, injuries, accidents, or other similar consequences arising from use that deviates from the prescribed requirements, is not in accordance with the intended purpose, or is unforeseeable.

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The party carrying out activities related to the product is obliged to fully comply with all applicable legal requirements.

The compiler of the safety data sheet and the company making it available shall not be held liable for any damages arising from modifications to the safety data sheet and/or label design provided to the Client, where such modifications were not carried out by the compiler of the safety data sheet.

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