

According to Regulation (EC) No 1907/2006

Hydrogen chloride, 1M in Diethyl ether



Version number: 3.0
Issued: 2023-11-15
Replaces SDS: 2019-01-31

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

1.1. Product identifier

Trade name

Hydrogen chloride, 1M in Diethyl ether

Article No.

90026878

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

Relevant identified uses

Research and development.

Not suitable for use in

Not suitable for human consumption or veterinary purposes.

1.3. Details of the supplier of the safety data sheet

Supplier

Molekula Group

Address

Molekula Ltd, Lingfield Way, Darlington,
DL1 4XX Darlington
United Kingdom

Telephone

+44 (0) 3302 000 333

Email

info@molekula.com

Web site

www.molekula.com

Contact person

Kevin Banks

Email

+44 (0) 7769276927

1.4. Emergency telephone number

Poison center/Additional emergency number

0344 892 0111 - National Poisons Information Service (Newcastle Centre)

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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Classification

Flammable liquids, hazard category 1
 Acute toxicity, oral, hazard category 4
 Serious eye damage, hazard category 1
 Specific Target Organ Toxicity — Single exposure, hazard category 3 - narcosis
 Carcinogenicity, hazard category 2

Hazard statements

H224, H302, H318, H336, H351

Supplemental hazard statements

EUH019, EUH066

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008

Hazard pictograms



Signal word

Danger

Hazard statements

H224 Extremely flammable liquid and vapour.
 H302 Harmful if swallowed.
 H318 Causes serious eye damage.
 H336 May cause drowsiness or dizziness.
 H351 Suspected of causing cancer.

Supplemental hazard statements

EUH019 May form explosive peroxides.
 EUH066 Repeated exposure may cause skin dryness or cracking.

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Precautionary statements

P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been read and understood.
 P261 Avoid breathing .
 P264 Wash skin thoroughly after handling.
 P271 Use only outdoors or in a well-ventilated area.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P310 Immediately call a POISON CENTER/doctor.
 P312 Call a POISON CENTER/doctor if you feel unwell.
 P330 Rinse mouth.
 P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
 P302 + P352 IF ON SKIN: Wash with plenty of water/.
 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.
 P308 + P313 IF exposed or concerned: Get medical advice/attention.
 P332 + P313 If skin irritation occurs: Get medical advice/attention.
 P405 Store locked up.
 P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
 P362 + P364 Take off contaminated clothing and wash it before reuse.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical name	CAS No. EC No. REACH No. Index No.	Concentration	Classification	H-phrase M factor acute M factor chronic	Note
diethyl ether; ether	60-29-7 200-467-2 01-2119535785-29 603-022-00-4	>95 - ≤97%	Flam. Liq. 1, Acute Tox. 4 - oral, Eye Irrit. 2, STOT SE 3 - nar- cosis, Carc. 2	H224, H302, H319, H336, H351, EUH019, EUH066 - -	-
Hydrogen Chloride Gas	7647-01-0 231-595-7 01-2119484862-27 017-002-00-2	≥3 - <5%	Press. Gas, Skin Corr. 1A, Eye Dam. 1, Acute Tox. 3 - inhalation	H280, H314, H318, H331 - -	5 U

Substance additional information

For the complete text of H- / EUH-statements mentioned in this section, see section 16.

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SECTION 4: First aid measures

4.1. Description of first aid measures

Get medical attention if any discomfort continues. Show this Safety Data Sheet (SDS) to medical personnel.

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF INHALED:

Remove person to fresh air and keep comfortable for breathing.

In case of persistent throat irritation or coughing: Seek medical attention and bring these instructions.

Skin contact

IF ON SKIN: Wash with plenty of soap and water. Continue to rinse for at least 15 minutes. Get medical advice/attention if you feel unwell.

Eye contact

Remove contact lenses if present. Rinse eyes with water. Continue to rinse for at least 15 minutes and seek medical attention.

Ingestion

Rinse mouth. Do NOT induce vomiting. Get medical advice/attention if you feel unwell.

Information for doctors

No data available.

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

The severity of the symptoms described will vary dependant of the concentration and the length of exposure.

Inhalation

Single exposure may cause the following adverse effects: Upper respiratory irritation. Difficulty in breathing. Vapours may cause drowsiness and dizziness.

Skin contact

Single exposure may cause the following adverse effects: Severe skin irritation. Prolonged contact may cause dryness of the skin.

Eye contact

Causes serious eye damage.

Ingestion

Single exposure may cause the following adverse effects: Severe abdominal pain. Nausea, vomiting.

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

Treat symptomatically. No special treatment requirement.

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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Use alcohol resistant foam, carbon dioxide or dry powder to extinguish.

Unsuitable extinguishing media

No specific fire fighting procedure given.

5.2. Special hazards arising from the substance or mixture

Specific hazards: HIGHLY FLAMMABLE!

Containers can burst violently when heated, due to excess pressure build-up.

Vapours may form explosive mixture with air at room temperature.

Carbon monoxide (CO). Carbon dioxide (CO₂). Hydrochloric acid (HCl).

Vapours are heavier than air and may travel along the floor and in the bottom of containers.

Development of hazardous combustion gases or vapours possible in the event of fire.

5.3. Advice for firefighters

Special protective equipment for fire-fighters

Evacuate area. Avoid breathing gas, fume, vapours or spray. Prevent skin contact by maintaining a safe distance and by wearing suitable protective equipment/ clothing. Cool containers exposed to heat with water spray and remove container, if no risk is involved.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid inhalation of vapours and spray mist and contact with skin and eyes. For personal protection, see section 8. Provide adequate ventilation. Remove sources of ignition. Beware of the explosion danger. Take action to prevent static discharges.

6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground. Risk of explosion.

6.3. Methods and material for containment and cleaning up

Collect with absorbent, non-combustible material into suitable containers. Remove sources of ignition. Beware of the explosion danger. Use spark-proof tools and explosion-proof equipment.

6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Preventive handling precautions

For precautions see section 2.2. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take action to prevent static discharges. Use spark-proof tools and explosion-proof equipment. Wear protective clothing, gloves, eye and face protection. Avoid contact with skin and eyes. Avoid ingestion and inhalation.

General hygiene

Observe good chemical hygiene practices. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove contaminated clothing and launder thoroughly before re-use. Wash skin thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Store in a dry place. Store in a closed container. Recommended storage temperature: 2 to 8°C (35.6 to 46.4°F)

Handle and store contents under inert gas.

7.3. Specific end use(s)

No specific usage precautions noted.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits

No occupational exposure limit assigned.

National occupational exposure limits

Ingredient	CAS No. EC No.	Exposure limit ppm / mg/m ³	Short-term exposure limit ppm / mg/m ³	Source	Remark	Year
diethyl ether; ether	60-29-7 200-467-2	- -	200 620	-	UK. EH40 WEL	-

DNEL/DMEL

Product/Substance name (CAS No./EC No.)	Type	Exposure	Value	Population	Effects
diethyl ether; ether (60-29-7/200-467-2)	DNEL	Acute (short term) Inhalation	616 mg/m ³	Workers	Systemic

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Product/Substance name (CAS No./EC No.)	Type	Exposure	Value	Population	Effects
diethyl ether; ether (60-29-7/200-467-2)	DNEL	Chronic (long term) Inhalation	308 mg/m ³	Workers	Systemic
diethyl ether; ether (60-29-7/200-467-2)	DNEL	Chronic (long term) Dermal	44 mg/kg bw/day	Workers	Systemic

PNEC/PEC

Product/Substance name (CAS No./EC No.)	Type	Environmental compartment	Value
diethyl ether; ether (60-29-7/200-467-2)	PNEC	Freshwater	2 mg/l
diethyl ether; ether (60-29-7/200-467-2)	PNEC	Marine water	0.2 mg/l
diethyl ether; ether (60-29-7/200-467-2)	PNEC	Sediment (freshwater)	9.14 mg/kg
diethyl ether; ether (60-29-7/200-467-2)	PNEC	Sediment (marine water)	0.914 mg/kg
diethyl ether; ether (60-29-7/200-467-2)	PNEC	Intermittent releases (freshwater)	1.65 mg/l
diethyl ether; ether (60-29-7/200-467-2)	PNEC	Sewage Treatment Plant	4.2 mg/l
diethyl ether; ether (60-29-7/200-467-2)	PNEC	Soil	0.66 mg/kg

8.2. Exposure controls

Eye / face protection

Wear eye protection.

Hand protection

Wear protective gloves. No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals.

Wash contaminated skin thoroughly after handling.

Other skin protection

Wash skin thoroughly after handling.

Respiratory protection

Provide adequate ventilation. If ventilation is insufficient, suitable respiratory protection must be provided.

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Environmental exposure controls

Avoid discharge into drains. Risk of explosion.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state

Liquid

Colour

Clear colourless liquid

Odour

No data available

Melting point / freezing point

No data available

Boiling point or initial boiling point and boiling range

No data available

Flammability

No data available

Lower and upper explosion limit

No data available

Flash point

-40 °C

Auto-ignition temperature

No data available

Decomposition temperature

No data available

pH

No data available

Kinematic viscosity

No data available

Solubility

No data available

Partition coefficient n-octanol/water

No data available

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Vapour pressure

No data available

Density and/or relative density

0.731 g/cm³

Relative vapour density

No data available

Particle characteristics

No data available

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions

There are no known conditions that are likely to result in a hazardous situation.

10.4. Conditions to avoid

Heat, sparks, flames.

10.5. Incompatible materials

There are no known reactivity hazards associated with this product.

10.6. Hazardous decomposition products

See section 5.

SECTION 11: Toxicological information

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

Acute toxicity

Product / Sub- stance name CAS / EC no.	Dose descriptor	Value / Dose	Exposure route	Duration of exposure	Test animals	Remarks
Hydrogen Chloride Gas	LD50	900 mg/kg	Oral	-	Rabbit	-

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Product / Substance name CAS / EC no.	Dose descriptor	Value / Dose	Exposure route	Duration of exposure	Test animals	Remarks
7647-01-0 / 231-595-7						
Hydrogen Chloride Gas 7647-01-0 / 231-595-7	LC50	1562 ppmV (gas)	Inhalation	Rat	-	-
diethyl ether; ether 60-29-7 / 200-467-2	Acute Toxicity (Oral LD50):	1,211mg/kg	-	-	Rat	(RTECS)
diethyl ether; ether 60-29-7 / 200-467-2	Acute Toxicity (Dermal LD50):	> 20,000mg/kg	-	-	Rabbit	(ECHA)
diethyl ether; ether 60-29-7 / 200-467-2	Acute Toxicity (Inhalation LC50):	97.5mg/l	-	4 hours	Mouse	(RTECS)

Skin corrosion/irritation

Product / Substance name CAS / EC no.	Other
Hydrogen Chloride Gas 7647-01-0 / 231-595-7	Extremely corrosive and destructive to tissue.

Aspiration hazard

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

11.2. Information on other hazards

No data available

SECTION 12: Ecological information

12.1. Toxicity

Acute toxicity

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Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species	Remark
diethyl ether; ether 60-29-7 / 200-467-2	LC50	2,840mg/l	48 hours	Leuciscus idus (Golden orfe)	(ECOTOX Database)

Acute algae toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
diethyl ether; ether 60-29-7 / 200-467-2	ErC50	> 100mg/l	72 hours	Desmodesmus subspicatus (green algae)

Acute crustacean toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species	Remark
diethyl ether; ether 60-29-7 / 200-467-2	EC50	1,380mg/l	48 hours	Daphnia magna	(IUCLID)

Micro-/macro organism toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
diethyl ether; ether 60-29-7 / 200-467-2	EC50	21,000mg/l	3 hours	Activated sludge.
diethyl ether; ether 60-29-7 / 200-467-2	NOEC	42mg/l	3 hours	Activated sludge.

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

No data available

12.4. Mobility in soil

No data available

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12.5. Results of PBT and vPvB assessment

No data available

12.6. Endocrine disrupting properties

This product does not contain any known or suspected endocrine disruptors.

12.7. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal considerations

Dispose of contents/container in accordance with local regulations.

SECTION 14: Transport information

14.1. UN number

2924

14.2. UN proper shipping name

ADR / RID / ADN proper shipping name

FLAMMABLE LIQUID, CORROSIVE, N.O.S. (Hydrogen chloride, 1M in Diethyl ether)

IMDG proper shipping name

FLAMMABLE LIQUID, CORROSIVE, N.O.S. (Hydrogen chloride, 1M in Diethyl ether)

IATA proper shipping name

Flammable liquid, corrosive, n.o.s. (Hydrogen chloride, 1M in Diethyl ether)

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14.3. Transport hazard class(es)

Label

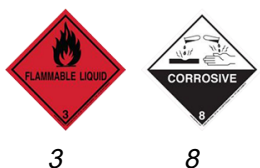
ADR/RID/ADN



IMDG



IATA



ADR / RID Class

3

ADR / RID Classification code

FC

ADR / RID hazard identification number

338

IMDG Class

3 (8)

IATA Class

3 (8)

ADN Class

3

ADN Class Code

FC

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14.4. Packing group

ADR / RID / ADN: I
IMDG: I
IATA: I

14.5. Environmental hazards

IMDG EmS

F-E, S-C

14.6. Special precautions for user

Tunnel restriction code: C/E
Transport category: 1

14.7. Maritime transport in bulk according to IMO instruments

IBC Instruction: IBC03

SECTION 15: Regulatory information

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

EU regulations

This SDS is not mandated under REACH Regulation (EC) No 1907/2006 and is provided for information only.

This material safety data sheet complies with the requirements of Regulation (EU) 2020/878.

National regulations

No data available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

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SECTION 16: Other information

Phrase meaning

Flam. Liq. 1 - Flammable liquids, hazard category 1
Acute Tox. 4 - oral - Acute toxicity, oral, hazard category 4
Eye Dam. 1 - Serious eye damage, hazard category 1
STOT SE 3 - narcosis - Specific Target Organ Toxicity — Single exposure, hazard category 3 - narcosis
Carc. 2 - Carcinogenicity, hazard category 2
Press. Gas - Gases under pressure
Skin Corr. 1A - Skin corrosion, hazard category 1A
Acute Tox. 3 - inhalation - Acute toxicity, inhalation, hazard category 3
Eye Irrit. 2 - Eye irritation, hazard category 2
H224 Extremely flammable liquid and vapour.
H280 Contains gas under pressure; may explode if heated.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer.
EUH019 May form explosive peroxides.
EUH066 Repeated exposure may cause skin dryness or cracking.