

# SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006 (REACH).

Reference: SDS1; Revision Date: 20/09/2022; Rev No: 09



## HYDROCHLORIC ACID (Concentration $\geq$ 25 %)

### SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

#### 1.1. Product Identifiers

-Product Name : **HYDROCHLORIC ACID (Concentration  $\geq$  25 %)**  
-Substance name : Hydrochloric acid...%  
-Molecular Formula : HCl  
- EC No. : 231-595-7  
-Reach Registration Number : 01-2119484862-27-0107

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

**-Identified uses** :  
- Reagent  
- pH-regulating agent  
- Ion exchange resins regenerating agent  
- Pickling agent  
- Washing and Cleaning agent  
- Laboratory chemical

**-Uses advised against** : - None

#### 1.3. Details of the supplier of the safety data sheet

-Company : MICRO-BIO (IRELAND) LTD  
-Address : Industrial Estate, Fermoy, Co. Cork, Ireland  
-Telephone : +3532531388  
-Fax : +3532532458  
-E-mail address : [dobrien@micro-bio.ie](mailto:dobrien@micro-bio.ie)

#### 1.4. Emergency telephone number

-Emergency telephone number : +3532531388 (Available 24/7)

### SECTION 2: HAZARDS IDENTIFICATION

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

##### 2.1.1. European regulation (EC) 1272/2008, as amended

*Classified as hazardous according to the European regulation (EC) 1272/2008, as amended*

Hazard class	Hazard category	Route of exposure	H Phrases
Skin corrosion	Category 1B		H314
Specific target organ toxicity - Single exposure	Category 3	Inhalation	H335
Corrosive to metals	Category 1		H290

#### 2.2. Label elements

According to Regulation (EC) 1272/2008, as amended

##### 2.2.1. Name(s) on label

Hazardous components : Hydrochloric acid...%

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According to Regulation (EC) No. 1907/2006 (REACH).

## 2.2.2. Signal word

Danger

## 2.2.3. Hazard symbols



## 2.2.4. Hazard statements

- |      |   |   |
|------|---|---|
| H314 | - | Causes severe skin burns and eye damage. H335 |
|      | - | May cause respiratory irritation.             |
| H290 | - | May be corrosive to metals.                   |

## 2.2.5. Precautionary statements

- |                   |                    |   |  |
|-------------------|--------------------|---|--|
| <b>Prevention</b> | P260               | - | Do not breathe dust or mist  |
|                   | P280               | - | Wear protective gloves/protective clothing/eye protection/face protection.   |
| <b>Response</b>   | P303 + P361 + P353 | - | IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.                       |
|                   | P305 + P351 + P338 | - | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
|                   | P304 + P340        | - | IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.                                 |
|                   | P309 + P311        | - | IF exposed or if you feel unwell: Call a POISON CENTRE or doctor/physician.  |
| <b>Disposal</b>   | P501               | - | Dispose of contents/container to an approved waste disposal plant.   |

## 2.2. Other Hazards

Does not meet the criteria for persistent, bioaccumulative and toxic (PBT) or very persistent, very bioaccumulative (vPvB) substances.

## SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

### 3.1. Substances

Substance name	Hazard class	Hazard category	H Phrases	Concentration
<b>Hydrochloric acid</b> CAS-No.: 7647-01-0 EC-No.: 231-595-7 Index-No.: 017-002-01-X	Skin corrosion	Category 1B	H314	<b>25-38%</b>
	Specific target organ toxicity – single exposure	Category 3	H335	
	Corrosive to metals	Category 1	H290	

For full text of H Statements see section 16.

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

#### 4.1.1. If inhaled

- Move to fresh air.
- Oxygen or artificial respiration if needed.
- Victim to lie down in the recovery position, cover and keep him warm.
- Call a physician immediately.

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According to Regulation (EC) No. 1907/2006 (REACH).

### 4.1.2. In case of eye contact

- SPEED IS ESSENTIAL.
- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- In the case of difficulty of opening the lids, administer an analgesic eye wash (oxybuprocaine).
- Call a physician or poison control centre immediately.
- Take victim immediately to hospital.

### 4.1.3. In case of skin contact

- SPEED IS ESSENTIAL.
- Take off contaminated clothing and shoes immediately.
- Wash off immediately with plenty of water.
- Keep warm and in a quiet place.
- Call a physician or poison control centre immediately.
- Wash contaminated clothing before re-use.

### 4.1.4. If swallowed

- Call a physician or poison control centre immediately.
- Take victim immediately to hospital.
- If swallowed, rinse mouth with water (only if the person is conscious).
- Do NOT induce vomiting.
- Artificial respiration and/or oxygen may be necessary.

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

### 4.2.1. Inhalation

- Severe respiratory irritant
- Symptoms: Breathing difficulties, cough, chemical pneumonitis, pulmonary oedema
- Repeated or prolonged exposure: Nose bleeds, chronic bronchitis.

### 4.2.2. Skin contact

- Causes severe burns.
- Symptoms: Redness, Swelling of tissue, Burns.

### 4.2.3. Eye contact

- Corrosive – causes irreversible eye damage
- May cause blindness.
- Symptoms: Redness, Lachrymation, Swelling of tissue, Burn

### 4.2.4. Ingestion

- If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.
- Symptoms: Nausea, Abdominal pain, Bloody vomiting, Diarrhoea, Suffocation, Cough, Severe shortness of breath.

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

Symptomatic treatment and supportive therapy as indicated.

## SECTION 5: FIREFIGHTING MEASURES

### 5.1. Extinguishing media

#### 5.1.1. Suitable extinguishing media

- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### 5.1.2. Unsuitable extinguishing media

- None.

### 5.2. Special hazards arising from the substance or mixture

- The product is not flammable.
- Not combustible
- Reacts violently with water.
- Hazardous decomposition products formed under fire conditions.
- Gives off hydrogen by reaction with metals.

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According to Regulation (EC) No. 1907/2006 (REACH).

### 5.3. Advice for firefighters

- In the event of fire, wear self-contained breathing apparatus.
- Use personal protective equipment.
- Wear chemical resistant oversuit.
- Cool containers / tanks with water spray.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. Advice for non-emergency personnel

- Prevent further leakage or spillage if safe to do so.
- Keep away from Incompatible products.

#### 6.1.2. Advice for emergency responders

- Evacuate personnel to safe areas.
- Keep people away from and upwind of spill/leak.
- Ventilate the area.
- Wear suitable protective clothing.

### 6.2. Environmental precautions

- Should not be released into the environment.
- If the product contaminates rivers and lakes or drains inform respective authorities.

### 6.3. Methods and materials for containment and cleaning up

- Dam up.
- Soak up with inert absorbent material.
- Prevent product from entering drains.
- Keep in properly labelled containers.
- Keep in suitable, closed containers for disposal.

### 6.4. Reference to other sections

- Refer to protective measures listed in sections 7 and 8

## SECTION 7: HANDLING AND STORAGE

### 7.1. Precautions for safe handling

- Used in closed system
- Use only in well-ventilated areas.
- When diluting, always add the product to water. Never add water to the product.
- Keep away from incompatible products.
- To avoid thermal decomposition, do not overheat.

### 7.2. Conditions for safe storage, including any incompatibilities

#### 7.2.1. Storage

- Store in original container.
- Keep in a well-ventilated place.
- Keep in properly labelled containers.
- Keep container closed.
- Keep away from incompatible products.

#### 7.2.2. Packaging material

##### 7.2.2.1. *Suitable material*

- Steel coated.

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According to Regulation (EC) No. 1907/2006 (REACH).

- PVC
  - Polyethylene
  - Reinforced polyester
  - Glass
- 7.2.2.2. *Unsuitable material*
- Metals

### 7.3. Specific end use(s)

- For further information, please contact: Supplier

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

#### 8.1.1. Exposure Limit Values

##### Hydrochloric acid

- Ireland: Code of Practice for the Safety Health & Welfare at Work (Chemical Agents) Regulations 2021 (SI No. 623 of 2015)  
Occupational Exposure Limit Value (8-hour reference period) = 5 ppm (= 8 mg/m<sup>3</sup>) - Remarks: Indicative
- Ireland: Code of Practice for the Safety Health & Welfare at Work (Chemical Agents) Regulations 2021 (SI No. 623 of 2015)  
Occupational Exposure Limit Value (15-minute reference period) = 10 ppm (= 15 mg/m<sup>3</sup>) - Remarks: Indicative
- UK. EH40 Workplace Exposure Limits (WELs) 2007  
Time weighted average = 1 ppm (=2 mg/m<sup>3</sup>) -Remarks: Gas and aerosol mists
- UK. EH40 Workplace Exposure Limits (WELs) 2007  
Short term exposure limit = 5 ppm (= 8 mg/m<sup>3</sup>) - Remarks: Gas and aerosol mists
- US. ACGIH Threshold Limit Values 2009  
Ceiling Limit Value = 2 ppm
- EU. Indicative Exposure and Directives relating to the protection of risks related to work exposure to chemical, physical, and biological agents. 12 2009  
Time weighted average = 5 ppm (= 8 mg/m<sup>3</sup>) - Remarks: Indicative
- EU. Indicative Exposure and Directives relating to the protection of risks related to work exposure to chemical, physical, and biological agents. 12 2009  
Short term exposure limit = 10 ppm (= 15 mg/m<sup>3</sup>) - Remarks: Indicative

#### 8.1.2. Other information on limit values

##### 8.1.2.1. *Predicted No Effect Concentration*

- Fresh water, 36 mg/l
- Marine water, 36 mg/l
- Sewage treatment plants, 36 mg/l

##### 8.1.2.2. *Derived No Effect Level / Derived minimal effect level*

- Workers, Inhalation, Acute effects, 15 mg/m<sup>3</sup>, Local effects
- Workers, Inhalation, Chronic effects, 8 mg/m<sup>3</sup>, Local effects

### 8.2. Exposure controls

#### 8.2.1. Appropriate engineering controls

- Provide adequate ventilation.
- Apply technical measures to comply with the occupational exposure limits.

#### 8.2.2. Individual protection measures

##### 8.2.2.1. *Respiratory protection*

- Use respirator when performing operations involving potential exposure to vapour of the product.
- Respirator with a vapour filter (EN 141)
- Recommended Filter type: E or combination ABEK
- Self-contained breathing apparatus in medium confinement/insufficient oxygen/in case of large uncontrolled emissions/in all circumstances when the mask and cartridge do not give adequate protection.

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### 8.2.2.2. Hand protection

- Impervious gloves in compliance with EN374:2003.
- Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact). The following list may be used for guidance but is not exhaustive:
- Nitrile rubber- NBR: thickness  $\geq 0,35\text{mm}$ ; breakthrough time  $\geq 480\text{min}$ .
- Polyvinyl chloride- PVC: thickness  $\geq 0,5\text{mm}$ ; breakthrough time  $\geq 480\text{min}$ .
- Butyl rubber IIR: thickness  $\geq 0,5\text{mm}$ ; breakthrough time  $\geq 480\text{min}$ .
- Dispose of contaminated gloves appropriately.

### 8.2.2.3. Eye protection

- Chemical resistant goggles or full-face shield must be worn.
- If splashes are likely to occur, wear: Tightly fitted safety goggles, Face shield.

### 8.2.2.4. Skin and body protection

- Chemical resistant apron
- If splashes are likely to occur, wear: Rubber or plastic boots, Rubber apron or full PVC overalls.

### 8.2.2.5. Hygiene measures

- Eye wash bottles or eye wash stations in compliance with applicable standards.
- Take off contaminated clothing and shoes immediately.
- Wash contaminated clothing before re-use.
- When using, do not eat, drink or smoke.
- Wash hands before breaks and at the end of workday.
- Handle in accordance with good industrial hygiene and safety practice.

### 8.2.3. Environmental Exposure controls

- Dispose of rinse water in accordance with local and national regulations.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

#### 9.1.1. General Information

- |                          |                  |  |
|--------------------------|------------------|--|
| <input type="checkbox"/> | Appearance       | Fuming liquid when in contact with air |
| <input type="checkbox"/> | Colour           | colourless to pale yellow              |
| <input type="checkbox"/> | Odour            | pungent                                |
| <input type="checkbox"/> | Molecular Weight | 36.47 g/mol                            |

#### 9.1.2. Important health safety and environmental information

- |                          |  |  |
|--------------------------|--|--|
| <input type="checkbox"/> | pH                                     | 0.1 (4 % solution)   |
| <input type="checkbox"/> | pKa                                    | Not applicable   |
| <input type="checkbox"/> | Melting point/freezing point           | -63°C (28%); -27°C (36%)   |
| <input type="checkbox"/> | Boiling point/boiling range            | 97.7°C (28%); 56. °C (36%)108°C  |
| <input type="checkbox"/> | Flash point                            | not applicable   |
| <input type="checkbox"/> | Evaporation rate                       | No data  |
| <input type="checkbox"/> | Flammability (solid, gas)              | not applicable   |
| <input type="checkbox"/> | Flammability                           | The product is not flammable   |
| <input type="checkbox"/> | Explosive properties                   | Not explosive  |
| <input type="checkbox"/> | Vapour pressure                        | ca. 190 hPa, at 20°C   |
| <input type="checkbox"/> | Vapour density                         | No data  |
| <input type="checkbox"/> | Relative density(20°C)                 | 1.14 (28%); 1.18 (36%)   |
| <input type="checkbox"/> | Bulk density                           | No data  |
| <input type="checkbox"/> | Solubility(ies)                        | Completely soluble in water  |
| <input type="checkbox"/> | Solubility/qualitative                 | Completely miscible, Ether, Alcohol, Acetone, Acetic acid, Benzene, Chloroform |
| <input type="checkbox"/> | Partition coefficient: n-octanol/water | not applicable   |
| <input type="checkbox"/> | Autoignition temperature               | No data  |
| <input type="checkbox"/> | Decomposition temperature              | No data  |
| <input type="checkbox"/> | Viscosity                              | No data  |

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According to Regulation (EC) No. 1907/2006 (REACH).

- Oxidizing properties                      Non oxidizer

## 9.2. Other information

Not available.

## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

- Potential for exothermic hazard
- Corrosive to metals

### 10.2. Chemical stability

- Stable under recommended storage conditions.

### 10.3. Possibility of hazardous reactions

- Gives off hydrogen by reaction with metals.
- Keep away from strong bases
- Risk of violent reaction with oxidising agents liberating Chlorine.
- Risk of explosion.

### 10.4. Conditions to avoid

- Keep away from direct sunlight.
- To avoid thermal decomposition, do not overheat.
- Exposure to moisture.
- Generation of mists or aerosols

### 10.5. Incompatible materials

- Metals, Oxidizing agents, Acids, Fluorine, Strong bases, Vinyl acetate, Hypochlorite

### 10.6. Hazardous decomposition products

- Hydrogen chloride gas, Hydrogen, Chlorine.

## ▶ SECTION 11: TOXICOLOGICAL INFORMATION

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

#### Acute toxicity

##### Acute oral toxicity

- no data available. Will immediately cause corrosion of and damage to gastrointestinal tract.

##### Acute inhalation toxicity

- LC50, rat, 45.6 mg/m<sup>3</sup> (Hydrogen Chloride)

##### Acute dermal toxicity

- no data available. Corrosive nature of the substance will predominate.

##### Irritation (other route)

- Inhalation, mouse, Irritating to respiratory system, 309 ppm, (Hydrogen chloride)
- Various species, Irritating to mucous membranes

#### Skin corrosion/irritation

- rabbit, Corrosive-causes severe burns.

#### Serious eye damage/eye irritation

- rabbit, Corrosive-causes severe eye damage.

#### Respiratory/skin sensitization

- Did not cause sensitization on laboratory animals.

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According to Regulation (EC) No. 1907/2006 (REACH).

## Germ cell mutagenicity

- In vitro tests did not show mutagenic effects

## Carcinogenicity

- Inhalation, Prolonged exposure, rat, Animal testing did not show any carcinogenic effects.

## Reproductive toxicity

- Animal testing did not show any effects on fertility.

## STOT - single exposure

- May cause respiratory irritation.

## STOT - repeated exposure

- Inhalation, rat, Respiratory system 15 mg/m<sup>3</sup>, NOAEC, (Hydrogen chloride)

## 11.2 Information on other hazards

- No data applicable.

## ► SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

Large discharges may contribute to the acidification of water and may be fatal to fish and other aquatic life. Can cause severe damage to aquatic plants.

- Fishes, *Lepomis macrochirus*, LC50, 96 h, 20.5 mg/l, pH 3,25 – 3,5 (Hydrogen chloride)
- Crustaceans, *Daphnia magna*, EC50, 48 h, 0.45 mg/l, pH 4,9 (Hydrogen chloride)
- Algae, *Chorella vulgaris*, EC50, 72 h, 0.73 mg/l, pH 4,7 (Hydrogen Chloride)

### 12.2. Persistence and degradability

Freely dissociates to Hydrogen and Chloride ions.

#### 12.2.1. Abiotic degradation

- Air, indirect photo-oxidation, t  $\frac{1}{2}$  11 d  
Conditions: sensitizer: OH radicals
- Water, Soil Result: Ionization/neutralization: Conditions: pH

#### 12.2.2. Biodegradation

- The methods for determining biological degradability are not applicable to inorganic substances.

### 12.3. Bioaccumulative potential

- Not applicable

### 12.4. Mobility in soil

- Air  
Very volatile
- Water, Soil  
Considerable solubility and mobility

### 12.5. Results of PBT and vPvB assessment

Not classified as PBT or vPvB

### 12.6. Endocrine disrupting properties

None.

### 12.7. Other adverse effects

- No data available





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According to Regulation (EC) No. 1907/2006 (REACH).

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

#### Product

- Dilute with plenty of water.
- Solutions with low pH-value must be neutralized before discharge.
- Neutralize with chalk, alkali solution or ammonia.
- In accordance with local and national regulations.

#### Contaminated packaging

- Where possible recycling is preferred to disposal or incineration.
- Clean container with water.
- Dispose of as unused product.
- In accordance with local and national regulations.

## ▶ SECTION 14: TRANSPORT INFORMATION

	ADR / RID / ADN / IMDG / IATA-DGR
14.1. UN number or ID number	UN 1789
14.2. UN proper shipping name	HYDROCHLORIC ACID
14.3. Transport hazard class(es)	8
14.4. Packing group	II
14.5. Environmental hazards	No
14.6. Special precautions for user	Not applicable
14.7. Maritime transport in bulk according to IMO instruments	Not applicable
14.8. Additional information	
ADR/RID HI/UN No.	80 / 1789
IMDG EmS	F-A S-B

## SECTION 15: REGULATORY INFORMATION

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

- Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), as amended.
- Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, as amended.
- Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work, as amended.
- Commission Directive 2000/39/EC of 8 June 2000 establishing a first list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work, as amended.
- Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste.
- Code of Practice for the Safety Health & Welfare at Work (Chemical Agents) Regulations 2021 (SI No. 619 of 2001)
- COUNCIL DIRECTIVE 96/82/EC on the control of major-accident hazards involving dangerous substances as amended.
- EH40/2005. Workplace Exposure Limits, as amended through 1,10,2007 (WELs). Published by the Health and Safety Executive (HSE). Issued under the Control of Substances Hazardous to Health Regulations – as amended.

#### Notification status

Inventory Information	Status
Toxic Substance Control Act list (TSCA)	- In compliance with inventory

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Australian Inventory of Chemical Substances (AICS)	- In compliance with inventory
Canadian Domestic Substances List (DSL)	- In compliance with inventory
Korean Existing Chemicals List (ECL)	- In compliance with inventory
EU list of existing chemical substances (EINECS)	- In compliance with inventory
Japanese Existing and New Chemical Substances (MITI List) (ENCS)	- In compliance with inventory
Inventory of Existing Chemical Substances (China) (IECS)	- In compliance with inventory
Philippine Inventory of Chemicals and Chemical Substances (PICCS)	- In compliance with inventory
New Zealand Inventory of Chemicals (NZIOC)	- In compliance with inventory

## 15.2. Chemical safety assessment

Not available

## SECTION 16: OTHER INFORMATION

### 16.1. Full text of H-Statements referred to under section 3

- H290 - May be corrosive to metals.
- H314 - Causes severe skin burns and eye damage.
- H335 - May cause respiratory irritation

### 16.2. Other information

- Revised SDS (Revision 7).

Section	Revisions to Previous issue
11, 12, 14	Update in accordance with Regulation (EU) 2020/878..

- Indicates altered section

Supersedes: SDS1 Rev 08

- Distribute new edition to clients

This SDS is only intended for the indicated country to which it is applicable. The European SDS format compliant with the applicable European legislation is not intended for use nor distribution in countries outside the European Union with the exception of Norway and Switzerland. Safety datasheets applicable in other countries/regions are available upon request. The information given corresponds to the current state of our knowledge and experience of the product, and is not exhaustive. This applies to product which conforms to the specification, unless otherwise stated. In this case of combinations and mixtures one must make sure that no new dangers can arise. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and protection of human welfare and the environment.