

This safety data sheet was created pursuant to the requirements of: Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

01704 - Hydrochloric Acid (HCI, 2 N)

Revision Date 03-May-2024 Revision Number 2.2

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Document Number DX20822

Product Name Hydrochloric Acid (HCl, 2 N)

Pure substance/mixture Mixture

Contains Hydrochloric acid

Molecular weight 36.46

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

Recommended Use Laboratory reagent

Uses advised against No information available

1.3. Details of the supplier of the safety data sheet

Manufacturer

STEMCELL Technologies SARL

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STEMCELL Technologies Germany GmbH

Stolberger Str. 200, 50933, Köln, Germany

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STEMCELL Technologies UK Ltd.

Building 7100, Cambridge Research Park, Beach Drive, Waterbeach, Cambridge, UK, CB25 9TL

+33 (0) 4 76 04 75 30

For further information, please contact

1.4. Emergency telephone number

Emergency Telephone No information available

Emergency Telephone - §45 - (EC)1272/2008

Europe 112

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Acute toxicity - Inhalation (Gases) Category 4 - (H332)



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Skin corrosion/irritation	Category 1 Sub-category A - (H314)
Serious eye damage/eye irritation	Category 1 - (H318)
Corrosive to metals	Category 1

2.2. Label elements

Contains Hydrochloric acid



Signal word Danger

Hazard statements

Hazard statements

H314 - Causes severe skin burns and eye damage

H332 - Harmful if inhaled

H333 - May be harmful if inhaled

H290 - May be corrosive to metals

Precautionary Statements - EU (§28, 1272/2008)

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

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/ 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

P310 - Immediately call a POISON CENTER or doctor

P280 - Wear eye protection/ face protection

Additional information

This product requires child resistant fastenings if supplied to the general public This product requires tactile warnings if supplied to the general public

2.3. Other hazards

No information available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Synonym

Not applicable

3.2 Mixtures



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Chemical name	EC No.	CAS No.	Weight-%	Classification according to	REACH
				Regulation (EC) No.	Registration
				1272/2008 [CLP]	Number
Hydrochloric acid	231-595-7	7647-01-0	7.29	Acute Tox. 3 (H331)	No data available
				Skin Corr. 1A (H314)	
				Press. Gas	

Full text of H- and EUH-phrases: see section 16

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

General advice Immediate medical attention is required. Show this safety data sheet to the doctor in

attendance.

Inhalation Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give

artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical advice/attention. Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical

attention immediately.

Eye contact Get immediate medical advice/attention. Rinse immediately with plenty of water, also under

the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do.

Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated

clothes and shoes. Get immediate medical advice/attention.

Ingestion Get immediate medical advice/attention. Do NOT induce vomiting. Clean mouth with water

and drink afterwards plenty of water. Never give anything by mouth to an unconscious

person.

Self-protection of the first aider

Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Avoid

contact with skin, eyes or clothing. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid breathing vapors or mists. Use personal protective equipment as

required. See section 8 for more information.

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

Symptoms Burning sensation. Coughing and/ or wheezing. Difficulty in breathing.

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



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Note to physicians Product is a corrosive material. Use of gastric lavage or emesis is contraindicated.

Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood

pressure may occur with moist rales, frothy sputum, and high pulse pressure.

Section 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the

surrounding environment.

Unsuitable Extinguishing Media No information available.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the

chemical

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition

can lead to release of irritating gases and vapors.

5.3. Advice for firefighters

Special protective equipment for

fire-fighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout

gear. Use personal protection equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Attention! Corrosive material. Evacuate personnel to safe areas. Keep people away from

and upwind of spill/leak. Avoid contact with skin, eyes or clothing. Ensure adequate

ventilation. Avoid breathing vapors or mists. Use personal protective equipment as required.

Other Information Refer to protective measures listed in Sections 7 and 8.

6.2. Environmental precautions

Environmental precautionsShould not be released into the environment. Do not allow to enter into soil/subsoil. Prevent

product from entering drains. Prevent further leakage or spillage if safe to do so.

6.3. Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.



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Methods for cleaning upTake up mechanically, placing in appropriate containers for disposal.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sectionsSee section 8 for more information. See section 13 for more information.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling Handle product only in closed system or provide appropriate exhaust ventilation. Take off

contaminated clothing and wash before reuse. Avoid contact with skin, eyes or clothing. Handle in accordance with good industrial hygiene and safety practice. Avoid breathing vapors or mists. In case of insufficient ventilation, wear suitable respiratory equipment. Do

not eat, drink or smoke when using this product.

General hygiene considerations Remove and wash contaminated clothing and gloves, including the inside, before re-use.

Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this

product.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Protect from moisture. Store away from other materials. Store locked up. Keep out of the

reach of children. Store in accordance with information listed on the Product Information

Sheet (PIS).

7.3. Specific end use(s)

Identified Uses

Risk Management Methods (RMM) The information required is contained in this Material Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure Limits

	Chemical name	European Union	United Kingdom	France	Spain	Germany
Ī	Hydrochloric acid	TWA: 5 ppm	TWA: 1 ppm	STEL: 5 ppm	TWA: 5 ppm	TWA: 2 ppm
	7647-01-0	TWA: 8 mg/m ³	TWA: 2 mg/m ³	STEL: 7.6 mg/m ³	TWA: 7.6 mg/m ³	TWA: 3 mg/m ³



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	STEL: 10 ppm STEL: 15 mg/m ³	STEL: 5 ppm STEL: 8 mg/m ³		STEL: 10 ppm STEL: 15 mg/m ³	
Chemical name	Italy	Portugal	Netherlands	Finland	Denmark
Hydrochloric acid 7647-01-0	TWA: 5 ppm TWA: 8 mg/m³ STEL: 10 ppm STEL: 15 mg/m³	TWA: 5 ppm TWA: 8 mg/m ³ STEL: 10 ppm STEL: 15 mg/m ³ Ceiling: 2 ppm	TWA: 8 mg/m ³ STEL: 15 mg/m ³	STEL: 5 ppm STEL: 7.6 mg/m³	Ceiling: 5 ppm Ceiling: 8 mg/m³
Chemical name	Austria	Switzerland	Poland	Norway	Ireland
Hydrochloric acid 7647-01-0	TWA: 5 ppm TWA: 8 mg/m³ STEL 10 ppm STEL 15 mg/m³	TWA: 2 ppm TWA: 3 mg/m³ STEL: 4 ppm STEL: 6 mg/m³	STEL: 10 mg/m ³ TWA: 5 mg/m ³	Ceiling: 5 ppm Ceiling: 7 mg/m ³	TWA: 8 mg/m ³ TWA: 5 ppm STEL: 10 ppm STEL: 15 mg/m ³

Derived No Effect Level (DNEL)No information available.

Predicted No Effect Concentration

(PNEC)

No information available.

8.2. Exposure controls

Personal protective equipment

Eye/face protection Face protection shield.

Hand protection Impervious gloves. Wear suitable gloves.

Skin and body protection Long sleeved clothing. Chemical resistant apron. Wear suitable protective clothing.

exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Remove and wash contaminated clothing and gloves, including the inside, before re-use.

Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this

product.

Environmental exposure controls No information available.



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Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state Liquid

Appearance Clear

No information available Color

Pungent. Odor

Odor threshold No data available

Remarks • Method **Property** <u>Values</u>

рΗ 0.1 -17 °C Melting point / freezing point

Boiling point / boiling range 81.5 °C Flash point No data available

> 1 (Butyl Acetate = 1.0) **Evaporation rate**

Flammability (solid, gas) No data available None known Flammability Limit in Air None known

Upper flammability limit: No data available Lower flammability limit: No data available 160 mmHg @ 20 °C Vapor pressure 1.26 (Air = 1.0)

Vapor density

Relative density No data available None known

Water solubility Soluble in water Solubility(ies) No data available

None known No data available None known **Partition coefficient**

Autoignition temperature No data available **Decomposition temperature** No data available

None known Kinematic viscosity No data available None known Dynamic viscosity No data available None known **Explosive properties** No information available

Oxidizing properties No information available

9.2. Other information

Softening point No information available

Molecular weight 36.46

No information available Molecular formula **VOC Content (%)** No information available **Liquid Density** No information available **Bulk density** No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity No information available.

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10.2. Chemical stability

Stability Stable under recommended transport or storage conditions.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None. 10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid Exposure to air or moisture over prolonged periods. Excessive heat.

10.5. Incompatible materials

Incompatible materials Acids. Strong bases. Oxidizing agents.

10.6. Hazardous decomposition products

Hazardous decomposition products Hydrogen chloride gas. Thermal decomposition can lead to release of irritating and toxic

gases and vapors.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Information on likely routes of exposure

Product Information

Inhalation Corrosive by inhalation. Inhalation of corrosive fumes/gases may cause coughing, choking,

headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. Specific test data for the substance or mixture is not

available. Harmful by inhalation. (based on components).

Eye contact Causes burns. (based on components). Corrosive to the eyes and may cause severe

damage including blindness. Specific test data for the substance or mixture is not available.

Causes serious eye damage. May cause irreversible damage to eyes.

Skin contact Specific test data for the substance or mixture is not available. May cause irritation.



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Ingestion

Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways. Specific test data for the substance or mixture is not available.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Redness. Burning. May cause blindness. Coughing and/ or wheezing.

Numerical measures of toxicity

Acute toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 3,264.70 mg/kg
ATEmix (dermal) 68,793.00 mg/kg
ATEmix (inhalation-gas) 7,727.0535 ppm
ATEmix (inhalation-dust/mist) 6.872 mg/l

Unknown acute toxicity 7.29 % of the mixture consists of ingredient(s) of unknown toxicity.

0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.

100 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas).

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor).

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

Product Information

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50	
Hydrochloric acid	238 - 277 mg/kg (Rat)	> 5010 mg/kg (Rabbit)	= 1.68 mg/L (Rat) 1 h	

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Product Information	May cause skin irritation.
Serious eye damage/eye irritation	Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.
Product Information	· ·
Respiratory or skin sensitization Product Information	No information available.



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Germ cell mutagenicity No information available.

Product Information

CarcinogenicityNo information available.Product Information

Reproductive toxicity No information available.

Product Information

STOT - single exposure

No information available.

Product Information

STOT - repeated exposure No information available.

Product Information

Aspiration hazard No information available.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity The environmental impact of this product has not been fully investigated.

Unknown aquatic toxicityContains 0 % of components with unknown hazards to the aquatic environment.

Product Information

12.2. Persistence and degradability

Persistence and degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation No information available.

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment

Chemical name	PBT and vPvB assessment		
Hydrochloric acid	The substance is not PBT / vPvB PBT assessment does		



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not apply

12.6. Other adverse effects

Other adverse effects No information available.

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused

products

Dispose of in accordance with local regulations. Dispose of waste in accordance with

environmental legislation.

Contaminated packaging Do not reuse empty containers.

Section 14: TRANSPORT INFORMATION

IMDG

14.1 UN Number UN1789

14.2 UN proper shipping name HYDROCHLORIC ACID SOLUTION

14.3 Transport hazard class(es) 8
14.4 Packing Group |||

14.5 Marine pollutant Not applicable

14.6 Special Provisions None

14.7. Transport in bulk according to No information available

Annex II of MARPOL and the IBC

Code

RID

14.1 UN NumberNot regulated14.2 UN proper shipping nameNot regulated14.3 Transport hazard class(es)Not regulated14.4 Packing GroupNot regulated14.5 Environmental hazardNot applicable

14.6 Special Provisions None

ADR

14.1 UN NumberNot regulated14.2 UN proper shipping nameNot regulated14.3 Transport hazard class(es)Not regulated14.4 Packing GroupNot regulated14.5 Environmental hazardNot applicable

14.6 Special Provisions None



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IATA

14.1 UN Number UN1789

14.2 UN proper shipping name HYDROCHLORIC ACID SOLUTION

14.3 Transport hazard class(es) 8
14.4 Packing Group |||

14.5 Environmental hazard Not applicable

14.6 Special Provisions None

Section 15: REGULATORY INFORMATION

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

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorizations and/or restrictions on use:

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH	Substance subject to authorization per	
	Annex XVII	REACH Annex XIV	
Hydrochloric acid - 7647-01-0	75.		

Persistent Organic Pollutants

Not applicable

Named dangerous substances per Seveso Directive (2012/18/EU)

Chemical name	Lower-tier requirements (tons)	Upper-tier requirements (tons)
Hydrochloric acid - 7647-01-0	25	250

Ozone-depleting substances (ODS) regulation (EC) 1005/2009 Not applicable

International Inventories

TSCA Complies
DSL/NDSL Complies
EINECS/ELINCS Complies

ENCS Does not comply

IECSCCompliesKECLCompliesPICCSCompliesAICSComplies

Legend:



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TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

15.2. Chemical safety assessment

Chemical Safety Report No information available

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under section 3

H314 - Causes severe skin burns and eye damage

H331 - Toxic if inhaled

Legend

SVHC: Substances of Very High Concern for Authorization:

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA TWA (time-weighted average) STEL STEL (Short Term Exposure Limit)

Ceiling Maximum limit value * Skin designation

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

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. STEMCELL Technologies Inc. shall not be held liable for any damage resulting from handling or from contact with the product.