Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 04/28/2023 Reviewed on 04/28/2023

*

1 Identification

· **Product Identifier**

· **Trade Name: Hydrochloric Acid (HCl)**
· **Relevant identified uses of the substance or mixture and uses advised against:**
· **Product Description:** Strong acid composed of hydrogen and chloride ions.

· **Details of the Supplier of the Safety Data Sheet:**
· **Manufacturer/Supplier:**
Alchemie Labs Inc.
53 Capital Dr
Wallingford, CT 06492
203-208-8869
· **Emergency telephone number:** 203-208-8869

2 Hazard(s) Identification

· **Classification of the substance or mixture:**


Corrosion

Skin Corrosion 1B	H314 Causes severe skin burns and eye damage.
Eye Damage 1	H318 Causes serious eye damage.

Acute Toxicity - Oral 4	H302 Harmful if swallowed.
Acute Toxicity - Inhalation 4	H332 Harmful if inhaled.
Specific Target Organ Toxicity - Single Exposure 3	H335 May cause respiratory irritation.

· **Label elements:**
· **Hazard pictograms:**

· **Signal word:** Danger

· **Hazard-determining components of labeling:**
Hydrochloric acid
· **Hazard statements:**
H302+H332 Harmful if swallowed or if inhaled.
H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.
· **Precautionary statements:**
P260 Do not breathe dusts or mists.
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

(Contd. on page 2)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 04/28/2023 Reviewed on 04/28/2023

Trade Name: Hydrochloric Acid (HCl)

P301+P312	If swallowed: Call a poison center/doctor if you feel unwell.
P301+P330+P331	If swallowed: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ 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.
P321	Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
P363	Wash contaminated clothing before reuse.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· ***Unknown acute toxicity:***
This value refers to knowledge of known, established toxicological or ecotoxicological values.
· ***Classification system:*** NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme
· ***NFPA ratings (scale 0 - 4)***

Health = 3
Fire = 0
Reactivity = 1

· ***HMIS-ratings (scale 0 - 4)***

Health = *3
Fire = 0
Physical Hazard = 1

· ***Hazard(s) not otherwise classified (HNOC):*** None known

3 Composition/Information on Ingredients

· ***Non-hazardous components:***

7732-18-5	Water, distilled water, deionized water	62.8%

· ***Chemical characterization: Substance***
· ***Description:*** Mixture of substances listed below with non-hazardous additions.

· ***Dangerous Components:***

CAS: 7647-01-0 RTECS: MW 9620000	Hydrochloric acid Skin Corrosion 1B, H314; Eye Damage 1, H318; Acute Toxicity - Oral 4, H302; Acute Toxicity - Inhalation 4, H332; Specific Target Organ Toxicity - Single Exposure 3, H335 Specific concentration limits: Skin Corrosion 1B; H314: C ≥ 25 % Skin Irritation 2; H315: 10 % ≤ C < 25 % Eye Irritation 2; H319: 10 % ≤ C < 25 % Specific Target Organ Toxicity - Single Exposure 3; H335: C ≥ 10 %	37.2%

· ***Additional information:***
The exact percentages of the ingredients of this mixture are considered to be proprietary and are withheld in accordance with the provisions of paragraph (i) of §1910.1200 of 29 CFR 1910.1200 Trade Secrets.

(Contd. on page 3)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 04/28/2023 Reviewed on 04/28/2023

Trade Name: Hydrochloric Acid (HCl)

4 First-Aid Measures

· ***Description of first aid measures***
· ***General information:*** Immediately remove any clothing soiled by the product.
· ***After inhalation:***
In case of unconsciousness place patient stably in the side position for transportation.
After inhalation: fresh air. Call in physician.
· ***After skin contact:***
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.
· ***After eye contact:***
After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.
· ***After swallowing:***
After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.
· ***Information for doctor***
· ***Most important symptoms and effects, both acute and delayed:***
Exposure to the mist and vapor may erode exposed teeth.
Causes corrosive action on the mucous membranes.
· ***Indication of any immediate medical attention and special treatment needed:*** Treat symptomatically.

5 Fire-Fighting Measures

· ***Extinguishing media***
· ***Suitable extinguishing agents:*** Use fire fighting measures that suit the environment.
· ***For safety reasons unsuitable extinguishing agents:*** No further relevant information.
· ***Special hazards arising from the substance or mixture:***
Hydrogen chloride gas
Ambient fire may liberate hazardous vapours.
· ***Advice for firefighters***
· ***Special protective equipment for firefighters:***
As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with skin and eyes.

6 Accidental Release Measures

· ***Personal precautions, protective equipment and emergency procedures:***
Wear protective equipment. Keep unprotected persons away.
Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.
· ***Environmental precautions:*** Dilute with plenty of water.
· ***Methods and material for containment and cleaning up:***
Absorb with liquid-binding material (i.e. sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose of contaminated material as waste according to section 13.
Ensure adequate ventilation.
Dispose of the collected material according to regulations.
· ***Reference to other sections:***
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

(Contd. on page 4)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 04/28/2023 Reviewed on 04/28/2023

Trade Name: Hydrochloric Acid (HCl)

· **PAC-1:**		
7647-01-0	Hydrochloric acid	1.8 ppm
· **PAC-2:**		
7647-01-0	Hydrochloric acid	22 ppm
· **PAC-3:**		
7647-01-0	Hydrochloric acid	100 ppm

7 Handling and Storage

· **Handling**
· **Precautions for safe handling:**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**
· **Storage**
· **Requirements to be met by storerooms and receptacles:**
No metal containers.
Tightly closed.
Storage class (TRGS 510): 8B: Non-combustible, corrosive hazardous materials
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** Keep receptacle tightly sealed.
· **Specific end use(s):** No further relevant information available.

8 Exposure Controls/Personal Protection

· **Additional information about design of technical systems:** No further data; see section 7.

· **Control parameters:**

· **Components with occupational exposure limits:**	
7647-01-0 Hydrochloric acid	
PEL	Ceiling limit value: 7 mg/m³, 5 ppm
REL	Ceiling limit value: 7 mg/m³, 5 ppm
TLV	Ceiling limit value: 2 ppm A4

· **Additional information:** The lists that were valid during the creation of this SDS were used as basis.

· **Exposure controls:**
· **Personal protective equipment**
· **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing and wash before reuse.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
· **Breathing equipment:** Not required.

(Contd. on page 5)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 04/28/2023 Reviewed on 04/28/2023

Trade Name: Hydrochloric Acid (HCl)

· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

· **Material of gloves:**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material:**
The exact break-through time has to be determined and observed by the manufacturer of the protective gloves.

· **Eye protection:**

Tightly sealed goggles

· **Limitation and supervision of exposure into the environment:** None

9 Physical and Chemical Properties

· **Information on basic physical and chemical properties**
· **General Information**
· **Appearance:**

Form:	Liquid
Color:	Light yellow
· **Odor:**	Pungent
· **Odor threshold:**	Not determined.
· **pH-value @ 20 °C (68 °F):**	<1
· **Change in condition**	
Melting point/Melting range:	-30 °C (-22 °F)
Boiling point/Boiling range:	≥100 °C (≥212 °F)
· **Flash point:**	None
· **Flammability (solid, gaseous):**	Not applicable.
· **Auto igniting:**	Not applicable
· **Decomposition temperature:**	Not determined.
· **Ignition temperature:**	Product is not self-igniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	Not determined.
Upper:	Not determined.
· **Vapor pressure @ 21.1 °C (70 °F):**	227 hPa (170.3 mm Hg)

(Contd. on page 6)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 04/28/2023 Reviewed on 04/28/2023

Trade Name: Hydrochloric Acid (HCl)

· **Density @ 20 °C (68 °F):**	1.2 g/cm³ (10.014 lbs/gal)
· **Relative density:**	Not determined.
· **Vapor density:**	Not determined.
· **Evaporation rate:**	Not determined.
· **Solubility in / Miscibility with:**	
Water:	Fully miscible.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Solvent content:**	
Water:	62.8 %
VOC content:	0.00 %
Solids content:	0.0 %
· **Other information:**	No further relevant information available.

10 Stability and Reactivity

· **Reactivity:** No further relevant information available.
· **Chemical stability:** Product is stable under normal conditions.
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions:** No dangerous reactions known.
· **Conditions to avoid:** No further relevant information available.
· **Incompatible materials:**
Bases, Amines, Alkali metals, Metals, permanganates, for example potassium permanganate, Fluorine, metal acetylides, hexalithium disilicide, Metals
· **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological Information

· **Information on toxicological effects:**
· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**		
7647-01-0 Hydrochloric acid		
Oral	LD50	700 mg/kg (Rat) 900 mg/kg (Rabbit)
Dermal	LD50	5,010 mg/kg (Rabbit)
Inhalative	LC50/4 h	6.41 mg/l (Rat) Exposure to the mist and vapor may erode exposed teeth. Causes corrosive action on the mucous membranes.

· **Primary irritant effect:**
· **On the skin:**
Strong caustic effect on skin and mucous membranes.

7647-01-0 Hydrochloric acid		
Irritation of skin	Skin Irritation	(Rabbit)

(Contd. on page 7)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 04/28/2023 Reviewed on 04/28/2023

Trade Name: Hydrochloric Acid (HCl)

· ***On the eye:***
Strong irritant with the danger of severe eye injury.
Corrosive effect.
Causes serious eye irritation.

7647-01-0 Hydrochloric acid		
Irritation of eyes	Eye Irritation	(Rabbit)

· ***Additional toxicological information:***
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Corrosive
Irritant
Swallowing will lead to a corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· ***Carcinogenic categories:***

· ***IARC (International Agency for Research on Cancer):***		
7647-01-0	Hydrochloric acid	3

· ***NTP (National Toxicology Program):***
None of the ingredients are listed.

· ***OSHA-Ca (Occupational Safety & Health Administration):***
None of the ingredients are listed.

12 Ecological Information

· ***Toxicity:***

· ***Aquatic toxicity:***	
7647-01-0 Hydrochloric acid	
EC50	3.6 mg/l (Bluegill/sunfish) >56 mg/l (Daphnia)

· ***Persistence and degradability:*** No further relevant information available.
· ***Behavior in environmental systems:***
· ***Bioaccumulative potential:*** No further relevant information available.
· ***Mobility in soil:*** No further relevant information available.
· ***Additional ecological information:***
· ***General notes:***
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.
· ***Results of PBT and vPvB assessment:***
· ***PBT:*** Not applicable.
· ***vPvB:*** Not applicable.
· ***Other adverse effects:*** No further relevant information available.

(Contd. on page 8)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 04/28/2023 Reviewed on 04/28/2023

Trade Name: Hydrochloric Acid (HCl)

13 Disposal Considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household waste. Do not allow product to reach sewage system.
Observe all federal, state and local environmental regulations when disposing of this material.

· **Uncleaned packaging**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport Information

· **UN-Number:**
· **DOT, ADR/ADN, IMDG, IATA** UN1789
· **UN proper shipping name:**
· **DOT** Hydrochloric acid solution
· **ADR/ADN** UN1789 HYDROCHLORIC ACID solution
· **IMDG, IATA** HYDROCHLORIC ACID solution
· **Transport hazard class(es):**

· **DOT**

· **Class:** 8 Corrosive substances
· **Label:** 8

· **ADR/ADN**

· **Class:** 8 (C1) Corrosive substances
· **Label:** 8

· **IMDG, IATA**

· **Class:** 8 Corrosive substances
· **Label:** 8
· **Packing group:**
· **DOT, ADR/ADN, IMDG, IATA** II
· **Environmental hazards:** Not applicable.
· **Special precautions for user:** Warning: Corrosive substances
· **Hazard identification number (Kemler code):** 80
· **EMS Number:** F-A,S-B
· **Segregation groups:** (SGG1a) Strong acids

(Contd. on page 9)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 04/28/2023 Reviewed on 04/28/2023

Trade Name: Hydrochloric Acid (HCl)

· **Stowage Category**	C
· **Segregation Code**	SG36 Stow "separated from" SGG18-alkalis. SG49 Stow "separated from" SGG6-cyanides
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:**	Not applicable.
· **Transport/Additional information:**	
· **DOT**	
· **Quantity limitations:**	On passenger aircraft/rail: 1 L On cargo aircraft only: 30 L
· **ADR/ADN**	
· **Excepted quantities (EQ):**	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· **IMDG**	
· **Limited quantities (LQ):**	1L
· **Excepted quantities (EQ):**	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· **UN "Model Regulation":**	UN 1789 HYDROCHLORIC ACID SOLUTION, 8, II

15 Regulatory Information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture:**
No further relevant information available.

· **SARA (Superfund Amendments and Reauthorization):**

· **Section 355 (extremely hazardous substances):**

7647-01-0	Hydrochloric acid

· **Section 313 (Specific toxic chemical listings):**

7647-01-0	Hydrochloric acid

· **TSCA (Toxic Substances Control Act):**
All components have the value ACTIVE.

· **Hazardous Air Pollutants**

7647-01-0	Hydrochloric acid

· **California Proposition 65:**

· **Chemicals known to cause cancer:**
None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients are listed.

· **New Jersey Right-to-Know List:**

7647-01-0	Hydrochloric acid

(Contd. on page 10)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 04/28/2023 Reviewed on 04/28/2023

Trade Name: Hydrochloric Acid (HCl)

· **New Jersey Special Hazardous Substance List:**		
7647-01-0	Hydrochloric acid	CO, R1

· **Pennsylvania Right-to-Know List:**	
7647-01-0	Hydrochloric acid

· **Pennsylvania Special Hazardous Substance List:**		
7647-01-0	Hydrochloric acid	E

· **Carcinogenic categories:**

· **EPA (Environmental Protection Agency):**
None of the ingredients are listed.

· **TLV (Threshold Limit Value established by ACGIH):**		
7647-01-0	Hydrochloric acid	A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health):**
None of the ingredients are listed.

· **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms:**

· **Signal word:** Danger

· **Hazard-determining components of labeling:**
Hydrochloric acid
· **Hazard statements:**
H302+H332 Harmful if swallowed or if inhaled.
H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.
· **Precautionary statements:**
P260 Do not breathe dusts or mists.
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/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.
P321 Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
P363 Wash contaminated clothing before reuse.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

(Contd. on page 11)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 04/28/2023 *Reviewed on 04/28/2023*

Trade Name: Hydrochloric Acid (HCl)

P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· ***National regulations:***

The product is not subject to be labelled according with the prevailing version of the regulations on hazardous substances.

· ***Chemical safety assessment:*** A Chemical Safety Assessment has not been carried out.

16 Other Information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

· ***Contact:***

· ***Abbreviations and acronyms:***

ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety and Health
OSHA: Occupational Safety & Health Administration
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute Toxicity - Oral 4: Acute toxicity – Category 4
Skin Corrosion 1B: Skin corrosion/irritation – Category 1B
Eye Damage 1: Serious eye damage/eye irritation – Category 1
Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3

· **** Data compared to the previous version altered.***

SDS created by MSDS Authoring Services www.msdsauthoring.com +1-877-204-9106