SAFETY DATA SHEET

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

1.1 Product identifiers

Product name	Hydrochloric Acid 0.5N Solution
CAS number	7647-01-0
Synonyms	Muriatic Acid

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

Identified uses	Laboratory chemicals.

1.3 Details of the supplier of the safety data sheet

Company	Lab Alley, LLC 12501 Pauls Valley Road Austin, Texas 78737 U.S.A.
Telephone	512-668-9918
Fax	512-886-4008

1.4 Emergency telephone

Emergency Phone #	US & Canada: 1-800-535-5053	INFOTRAC
	International 1-352-323-3500	INFOTRAC

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Corrosive to Metals	Category 1
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 1

2.2 GHS Label elements, including precautionary statements

Pictogram 

Signal Word Danger

Hazard statements
May be corrosive to metals.
Causes skin irritation.
Causes serious eye damage.

Precautionary statements
Prevention: Keep only in original container. Wear eye/face protection. Wear protective gloves. Wash face, hands, and any exposed skin thoroughly after handling.

IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin irritation occurs: Get medical advice/attention.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

Storage: Store in corrosive resistant polypropylene container with a resistant inliner.

Disposal: Dispose of contents/container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None identified.

SECTION 3: Composition/information on ingredients

3.1 Components

Chemical name	Common name and synonyms	CAS number	Concentration
Water	Aqua; H2O	7732-18-5	98.17%
Hydrochloric acid	Muriatic acid	7647-01-0	1.83%

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

If inhaled Move to fresh air. If breathing is difficult, give oxygen. Obtain medical attention.

In case of skin contact	Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.
In case of eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
If swallowed	Do not induce vomiting. Obtain medical attention.

4.2 Most important symptoms and effects, both acute and delayed
May cause skin irritation and/or dermatitis.

4.3 Indication of any immediate medical attention and special treatment needed
If symptoms persist, call a physician. Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.
Unsuitable extinguishing media	No information available.

5.2 Specific hazards arising from the substance or mixture
Non-combustible; substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Keep product and empty container away from heat and sources of ignition. Thermal decomposition can lead to release of irritating gases and vapors. Hazardous Combustion Products: Hydrogen chloride gas.

5.3 Special protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

5.4 Further information

Flash Point	No information available.
Autoignition Temperature	No information available.
Explosion limits	

Upper No data available.
Lower No data available.
Sensitivity to Mechanical Impact No information available.
Sensitivity to Static Discharge No information available.
NFPA

Health	Flammability	Instability	Physical hazards
2	0	0	N/A

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing.

6.2 Environmental precautions

Avoid release to the environment. See Section 12 for additional Ecological Information.

6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

See Section 2 for full list of hazard and precaution statements.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions on safe handling
Wear personal protective equipment. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions
Keep containers tightly closed in a dry, cool, and well-ventilated place. Corrosives area.

Incompatibilities
Metals, Oxidizing agents, Reducing agents, Aldehydes.

SECTION 8: Exposure controls/personal protection

8.1 Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Component	Type	Value	
Hydrochloric acid	Ceiling	5 ppm	7 mg/m3
	(Vacated) Ceiling	5 ppm	7 mg/m3

US. ACGIH Threshold Limit Values

Component	Type	Value
Hydrochloric acid	TLV	2 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Component	Type	Value	
Hydrochloric acid	IDLH	50 ppm	
	Ceiling	5 ppm	7 mg/m3

Biological occupational exposure limits
No information available.

8.2 Exposure controls

Appropriate engineering controls
Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Eye/face protection
Wear appropriate protective eyeglasses or chemical safety goggles, as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN 166.

Skin protection
Wear appropriate protective gloves and clothing to prevent skin exposure.

Body Protection
Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory protection
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Control of environmental exposure
No information available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Clear
Odor	Pungent
Odor Threshold	No information available
pH	1.1 (0.1N)
Melting Point/Range	0 °C / 32 °F
Boiling Point/Range	100 °C / 212 °F
Evaporation Rate	No information available
Flammability (solid)	Not applicable
Flammability or explosive limit	No data available
Upper	
Lower	
Vapor Pressure	No information available
Vapor Density	No information available
Density	1.0 - 1.2
Solubility	Soluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temp	No information available
Decomposition Temp	No information available
Viscosity	No information available
Molecular Formula	HCl
Molecular Weight	36.46 g/mol
VOC Content(%)	No information available
Oxidizing properties	No information available

9.2 Other safety information

No information available.

SECTION 10: Stability and reactivity

10.1 Reactivity

No information available.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

None under normal processing.

10.4 Conditions to avoid

Incompatible products. Excess heat.

10.5 Incompatible materials

Metals, Oxidizing agents, Reducing agents, Aldehydes.

10.6 Hazardous decomposition products
Hydrogen chloride gas.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Product Information, Component Information

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Hydrochloric acid	238-277 mg/kg (Rat)	5010 mg/kg (Rabbit)	1.68 mg/L (Rat) 1 hr

Skin corrosion/irritation
Irritating to skin.

Serious eye damage/eye irritation
Causes eye burns.

Respiratory or skin sensitization
No information available.

Germ cell mutagenicity
Mutagenic effects have occured in microorganisms.

Carcinogenicity

Component	CAS	IARC	NTP	ACGIH	OSHA	Mexico
Hydrochloric acid	7647-01-0	Group 3	Not listed	Not listed	Not listed	Not listed

Specific target organ toxicity - single exposure
None known.

Specific target organ toxicity - repeated exposure
None known.

Reproductive toxicity
Experiments have shown reproductive toxicity effects on laboratory animals.

Chronic effects
No information available.

11.2 Additional Information
See actual entry in RTECS for complete information.

SECTION 12: Ecological information

12.1 Toxicity

Product		Species	Test Results
Hydrochloric acid	LC50	Freshwater Fish	282 mg/L 96 h

12.2 Persistence and degradability
Soluble in water. Persistence is unlikely based on information available.

12.3 Bio accumulative potential
No information available.

12.4 Mobility in soil
Will likely be mobile in the environment due to its water solubility.

12.5 Results of PBT and vPvB assessment
No information available.

12.6 Endocrine disrupting properties
No information available.

12.7 Other adverse effects
No information available.

SECTION 13: Disposal considerations

13.1 Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

SECTION 14: Transport information

DOT (US)

UN no.	UN1789
Proper Shipping Name	HYDROCHLORIC ACID, SOLUTION
Hazard Class	8
Packing Group	III

IMDG

UN no.	UN1789
Proper Shipping Name	Hydrochloric acid, solution
Hazard Class	8
Packing Group	III

IATA

UN no.	UN1789
Proper Shipping Name	Hydrochloric acid, solution
Hazard Class	8
Packing Group	III

SECTION 15: Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not applicable.

CERCLA Hazardous Substance List (40 CFR 302.4)

Listed, Hydrochloric acid (CAS# 7647-01-0), RQ: 5000 lb.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not applicable.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous

Acute Health Hazard.

SARA 313 (TRI reporting)

Not applicable.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Listed, Hydrochloric acid (CAS# 7647-01-0).

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Clean Water Act (CWA) - Hazardous Substances

Listed, Hydrochloric acid (CAS# 7647-01-0), RQ: 5000 lb.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Not listed.

US state regulations

US. Massachusetts RTK - Substance List

Listed, Hydrochloric acid (CAS# 7647-01-0).

US. New Jersey Worker and Community Right-to-Know Act

Listed, Hydrochloric acid (CAS# 7647-01-0).

US. Pennsylvania Worker and Community Right-to-Know Law

Listed, Hydrochloric acid (CAS# 7647-01-0).

California Proposition 65

Not listed.

SECTION 16: Other information

Issue date: 02/15/2010
Revision 1: 05/21/2022
Revision 2: 11/14/2024

SECTION 17: Disclaimer

The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.