SAFETY DATA SHEET

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

1.1 Product identifiers

Product name	Hydrochloric Acid
CAS number	7732-18-5
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 1B
Serious Eye Damage/Eye Irritation	Category 1
Specific target organ toxicity (single exposure) Target Organs - Respiratory system	Category 3
Specific target organ toxicity (repeated exposure) Target Organs - Kidney, Liver	Category 2

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal Word: Danger

Hazard statements: May be corrosive to metals. Causes severe skin burns and eye damage. May cause respiratory irritation. May cause damage to organs through prolonged or repeated exposure.

Precautionary statements:

Prevention: Do not breathe dust/fume/gas/mist/vapors/spray. Wash face, hands and any exposed skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Keep only in original container.

Response: Immediately call a POISON CENTER or doctor/physician.

Inhalation: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Skin: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.

Eyes: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Ingestion: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Spills: Absorb spillage to prevent material damage.

Storage: Store locked up. Store in a well-ventilated place. Keep container tightly closed. Store in a corrosive resistant polypropylene container with a resistant inliner. Store in a dry place.

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
Hydrochloric acid	Muriatic acid	7647-01-0	35-38%
Water	H2O, Aqua	7732-18-5	62-65%

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. Do not use mouth-to-mouth resuscitation if victim or inhaled the substance; induce artificial respiration with a respiratory medical device. Immediate medical attention is required.
In case of skin contact	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
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. Call a physician or Poison Control Center immediately.

4.2 Most important symptoms and effects, both acute and delayed

Cause burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger or perforation.

4.3 Indication of any immediate medical attention and special treatment needed

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

Corrosive material. Causes burns by all exposure routes. 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
3	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. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Do not get in eyes, on skin, or on clothing.

6.2 Environmental precautions

Should not be released into 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. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Do not ingest.

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
No information available

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	PEL (Ceiling)	5 ppm	7 mg/m3
	PEL (Vavated (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 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 EN166.

Skin and 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 EN149 approved respirator if exposure limits are exceeded or if irriation or other symproms 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	Colorless
Odor	Pungent
Odor Threshold	No information available
pH	< 1
Melting Point/Range	-35 °C / -31 °F
Boiling Point/Range	57 °C / 135 °F @ 760 mmHg
Evaporation Rate	No information available
Flammability (solid)	No information available
Flammability or explosive limit	
Upper	No data available
Lower	No data available
Vapor Pressure	125 mbar @ 20 °C
Vapor Density	1.27 (Air = 1.0)
Density	1.18
Solubility	Soluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temp	No information available
Decomposition Temp	No information available
Viscosity	1.8 mPa.s @ 15 °C
Molecular Formula	HCl.H2O
Molecular Weight	36.46
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

None known, based on information available

10.2 Chemical stability

Stable under normal conditions

10.3 Possibility of hazardous reactions

Contact with metals may evolve flammable hydrogen gas.

10.4 Conditions to avoid

Incompatible products. Excess heat

10.5 Incompatible materials

Metals, strong oxidizing agents, sodium hypochlorite, Amines, Bases, Fluorine, Cyanides, alkaline.

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 h

Skin corrosion/irritation

Causes burns by all exposure routes

Serious eye damage/eye irritation

Causes burns by all exposure routes

Respiratory or skin sensitization

Causes burns by all exposure routes

Germ cell mutagenicity

Mutegenic effects have occurred in experimental animals.

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

Respiratory system

Specific target organ toxicity - repeated exposure

Kidney, Liver

Reproductive toxicity

Experiments have shown reproductive toxicity effects on laboratory animals

Chronic effects

No information available

11.2 Additional Information

No information available

SECTION 12: Ecological information

12.1 Toxicity
Do not empty into drains

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

12.2 Persistence and degradability
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
See actual entry in RTECS for complete information .

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
Hazard Class	8
Packing Group	II

IMDG

UN-No	UN1789
Proper Shipping Name	HYDROCHLORIC ACID
Hazard Class	8
Packing Group	II

IATA

UN-No	UN1789
Proper Shipping Name	HYDROCHLORIC ACID

Hazard Class	8
Packing Group	II

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 listed

CERCLA Hazardous Substance List (40 CFR 302.4)

Listed: Hydrochloric acid, 5000 lb

SARA 304 Emergency release notification

Not listed

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Listed: Hydrochloric acid, 5000 lb

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous

Listed: Acute Health Hazard, Chronic Health Hazard.

SARA 313 (TRI reporting)

Listed: Hydrochloric acid

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Hydrochloric acid	7647-01-0	35-38	1.0

Other federal regulations

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

Listed: Hydrochloric acid

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

Not regulated.

Safe Drinking Water Act

Listed: Hydrochloric acid, 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

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

Listed: Hydrochloric acid

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

Listed: Hydrochloric acid

California Proposition 65

Not listed

SECTION 16: Other information

Issue date: 09/24/2009
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Revision 2: 07/22/2024
Revision 3: 07/03/2025

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.