

## SAFETY DATA SHEET

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

#### 1.1 Product identifiers

Product name: Hydrochloric Acid 30% - 50%  
CAS number: 7647-01-0  
Synonyms: Muriatic Acid, HCl Solution, Aqueous hydrogen chloride

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

Identified Uses: Process chemical, Laboratory reagent and scientific research and development.

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

Company : Lab Alley, LLC  
22111 Highway 71 West, Suite 601  
Spicewood, Texas 78669  
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  
Eye Damage Category 1  
Skin Corrosion Category 1B  
Specific Target Organ Toxicity Single Exposure Category 3 (Irritant)

## 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal Word:

**Danger**

Hazard statement(s):

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

Precautionary statement(s):

**Prevention** - Keep only in original container. Do not breathe mist or vapors. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves, protective clothing, eye protection and face protection.  
**Response** - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call POISON CENTER or doctor. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Immediately call POISON CENTER or doctor. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Immediately call POISON CENTER or doctor. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call POISON CENTER or doctor.

**Hazards not otherwise classified**

No information available.

## SECTION 3: Composition/information on ingredients

### 3.1 Components

| Ingredient        | CAS Number | Percent   | Hazardous Chemical |
|-------------------|------------|-----------|--------------------|
| Water             | 7732-18-5  | 50% - 70% | No                 |
| Hydrogen Chloride | 7647-01-0  | 30% - 50% | Yes                |

## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

**General advice:**

Show this safety data sheet to the doctor in attendance.

**If inhaled:**

Immediately remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing has stopped, administer artificial respiration. Do not use mouth-to-mouth if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician or poison control center immediately.

|                                 |  |
|---------------------------------|--|
| <b>In case of skin contact:</b> | Immediately flush skin with plenty of water for 15 minutes while removing contaminated clothing and shoes. Get immediate medical attention. Launder clothing before re-use. (Discard contaminated shoes.)        |
| <b>In case of eye contact:</b>  | Immediately flush thoroughly with water for 20 minutes, while holding the eye lids open to be sure the material is washed out. Remove contact lenses if present and easy to do. Get immediate medical attention. |
| <b>If swallowed:</b>            | Do NOT induce vomiting. Rinse mouth with water. Never give anything by mouth to an unconscious or convulsing person. Keep the victim calm and warm. Get immediate medical attention.                             |

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

Corrosive effects. May cause severe eye, skin, respiratory tract irritation and burns. May cause temporary blindness and severe eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

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

Immediate medical attention is required for all routes of exposure.

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

##### Suitable (and unsuitable) extinguishing media

Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire exposed containers cool.

#### 5.2 Specific hazards arising from the substance or mixture

Not considered to be a fire hazard. Irritating, corrosive and/or toxic gases or fumes will be released during a fire. Hydrochloric acid may react with metals to liberate flammable hydrogen gas.

#### 5.3 Special protective equipment and precautions for firefighters

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

#### 5.4 Further information

None.

### SECTION 6: Accidental release measures

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

Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8.

#### 6.2 Environmental precautions

No data available.

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

Contain and recover liquid when possible. Residues from spills can be diluted with water, neutralized with lime or soda ash. Absorb neutralized caustic residue on clay, vermiculite or other inert substance and package in a suitable container for disposal. Do not let product enter drains. Do not flush caustic residues to the sewer. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

## 6.4 Reference to other sections

For disposal see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Do not breathe mist or vapor. Use with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Prevent contact with eye, skin, and clothing. Always wear impervious gloves, chemical safety goggles and protective clothing when handling this material. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Keep containers closed when not in use.

#### Hygiene measures

For precautions see section 2.2.

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

#### Storage conditions

Store in a cool, dry, well ventilated location out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Keep container tightly closed. Keep out of the reach of children.

## 8. Exposure controls/personal protection

### 8.1 Occupational exposure limits

| Chemical Name     | Exposure Limits                                   |
|-------------------|---|
| Water             | None Established                                  |
| Hydrogen Chloride | 2 ppm Ceiling ACGIH TLV 5 ppm<br>Ceiling OSHA PEL |

### 8.2 Exposure controls

#### Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

## Personal protective equipment

### Eye/face protection

Use chemical safety goggles and full face shield where splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

### Skin protection

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

### Body Protection

No data available.

### Respiratory protection

In operations where the occupational exposure limits are exceeded, an approved respirator with applicable cartridges or supplied air respirator should be used. Respirator selection and use should be based on contaminant type, form and concentration. Follow applicable regulations and good Industrial Hygiene practice.

### Control of environmental exposure

No data available.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|  |   |
|--|---|
| <b>Physical State</b>                  | Liquid.   |
| <b>Appearance</b>                      | Colorless, clear liquid.                              |
| <b>Odor</b>                            | Pungent.  |
| <b>Odor Thresh</b>                     | No data available.                                    |
| <b>pH</b>                              | 0.1 (1.0N), 1.1 (0.1N), 2.02 (0.01N)                  |
| <b>Melting Point/Range</b>             | -74°C (101°F)   |
| <b>Boiling Point/Range</b>             | 53°C (127°F) Azoetrope (20.2%) boils at 109°C (228°F) |
| <b>Flash Point</b>                     | No data available.                                    |
| <b>Evaporation Rate</b>                | Not determined.                                       |
| <b>Flammability (solid, gas)</b>       | Not applicable.                                       |
| <b>Flammability or explosive limit</b> |   |
| <b>Upper</b>                           | : NA  |
| <b>Lower</b>                           | : NA  |

|   |                                     |
|---|-------------------------------------|
| <b>Vapor Pressure</b>                         | 190 @ 25°C (77°F)                   |
| <b>Vapor Density</b>                          | No information found.               |
| <b>Density</b>                                | 1.2g/cm <sup>3</sup> at 25°C (77°F) |
| <b>Solubility</b>                             | Soluble                             |
| <b>Partition coefficient; n-octanol/water</b> | No data available.                  |
| <b>Autoignition Temp</b>                      | No data available.                  |
| <b>Decomposition Temp</b>                     | No data available.                  |
| <b>Viscosity</b>                              | 2.3 mPa.s at 15°C (59°F)            |
| <b>Molecular Formula</b>                      | HCl                                 |
| <b>Molecular Weight</b>                       | 36.47 g/mol                         |
| <b>VOC Content(%)</b>                         | No data available.                  |
| <b>Oxidizing properties</b>                   | No data available.                  |

## 9.2 Other safety information

No data available.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Not available.

### 10.2 Chemical stability

Stable under ordinary conditions of use and storage.

### 10.3 Possibility of hazardous reactions

Hazardous polymerization does not occur. Hydrochloric acid may react with metals to liberate flammable hydrogen gas. Hydrochloric acid may also corrode some metals.

### 10.4 Conditions to avoid

None under normal conditions.

### 10.5 Incompatible materials

A strong mineral acid, concentrated hydrochloric acid is highly reactive with strong bases, metals, metal oxides, hydroxides, amines, carbonates and other alkaline materials. Incompatible materials also include cyanides, sulfides, sulfites, and formaldehyde.

### 10.6 Hazardous decomposition products

Thermal oxidative decomposition produces toxic chlorine fumes and explosive hydrogen gas.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Potential Health Effects

##### Inhalation:

Inhalation of mists or vapors may cause severe irritation and burns of the nose, throat and upper respiratory tract. Higher concentrations can cause burns, pulmonary edema and death.

##### Skin Contact:

Causes severe skin irritation and burns with redness, ulceration, pain, dermatitis, and scarring. Concentrated solutions cause deep ulcers and discolor skin.

##### Eye Contact:

Vapors cause irritation. Splashes cause severe pain, eye damage, and permanent blindness.

##### Ingestion:

Swallowing Hydrochloric Acid can cause immediate pain and burns of the mouth, throat, esophagus and gastrointestinal tract. May cause nausea, vomiting, and diarrhea. Swallowing may be fatal.

##### Chronic Exposure:

Prolonged inhalation may cause lung damage. Repeated exposure may cause damage to the tissues of the mucous membranes, upper respiratory tract, eyes and skin.

##### Aggravation of Pre-existing Conditions:

Persons with pre-existing eye and skin disorders or impaired respiratory function may be more susceptible to the effects of this material.

##### Carcinogenicity:

None of the components of this product are listed as a carcinogen or suspected carcinogen by OSHA, IARC, and NTP.

##### Reproductive Effects:

Reproductive harm is not expected from this product.

##### Mutagenic Effects:

Not expected to cause mutagenic activity.

##### Acute Toxicity:

Hydrochloric Acid: Inhalation rat LC50-588 ppm/4hr (for hydrochloric gas)

## 12. Ecological information

### 12.1 Toxicity

#### Exotoxicity:

| Product           | Species             | Test Results         |
|-------------------|---------------------|----------------------|
| Hydrochloric acid | Lepomis macrochirus | 30.9 mg/L 96 hr LC50 |

\*This product may be hazardous for the environment due to its low pH. Releases to the environment should be avoided.

### 12.2 Persistence and Degradability

This material is not expected to biodegrade.

### 12.3 Bioaccumulative Potential

No further relevant information available.

### 12.4 Mobility in Soil

When released into the soil, this material may leach into groundwater.

### 12.5 Other adverse effects

None known.

## 13. Disposal considerations

### 13.1 Waste Disposal Methods

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## SECTION 14: Transport information

### DOT (US)

UN number: 1789    Class: 8    Packing group: II  
Proper shipping name: Hydrochloric acid  
Reportable Quantity (RQ):  
Poison Inhalation Hazard: No

### IMDG

UN number: 1789    Class: 8    Packing group: II    EMS-No: F-A, S-B  
Proper shipping name: HYDROCHLORIC ACID

### IATA

UN number: 1789    Class: 8    Packing group: II  
Proper shipping name: Hydrochloric acid

## SECTION 15: Regulatory information

### US federal regulations:

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

Not regulated

**US OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)** Not on regulatory list

#### CERCLA Hazardous Substance List (40 CFR 302.4)

This product has a Reportable Quantity (RQ) of 13,513 lbs. (based on the RQ for Hydrochloric acid of 5,000 lbs present at 37%). Releases above the RQ must be reported to the National Response Center. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

#### Superfund Amendments and Reauthorization Act of 1986 (SARA)

##### Hazard categories:

##### SARA 311/312

Refer to Section 2 for OSHA Hazard Classification.

**Section 313 Toxic Chemicals:** This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements: None

##### SARA 302 Extremely hazardous substance

None

**Other federal regulations:**

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

HYDROGEN CHLORIDE (CAS 7647-01-0)

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

HYDROGEN CHLORIDE (CAS 7647-01-0)

**Safe Drinking Water Act (SDWA):**

Not regulated

**Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number**

HYDROGEN CHLORIDE (CAS 7647-01-0) 6545

**Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c)**

HYDROGEN CHLORIDE (CAS 7647-01-0) 20 %WV

**DEA Exempt Chemical Mixtures Code Number**

HYDROGEN CHLORIDE (CAS 7647-01-0) 6545

**Food and Drug Administration (FDA) - Not regulated**

**US state regulations - California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):** This product does not contain chemicals known in the State of California to cause cancer and/or reproductive harm.

**State Right To Know Act – Rhode Island (RTK), Massachusetts (substance list), Pennsylvania (Hazardous Substances), and New Jersey (Worker and Community Right-to-know Act) – 500 LBS**

HYDROGEN CHLORIDE (CAS 7647-01-0)

**International Inventories**

| Country(s) or region | Inventory name   | On inventory (yes/no)* |
|----------------------|--|------------------------|
| Australia            | Australian Inventory of Chemical Substances (AICS)         | Yes                    |
| Canada               | Domestic Substances List (DSL)                             | Yes                    |
| Canada               | Non-Domestic Substances List (NDSL)                        | No                     |
| China                | Inventory of Existing Chemical Substances in China (IECSC) | Yes                    |

|                             |   |     |
|-----------------------------|---|-----|
| Japan                       | Inventory of Existing and New Chemical Substances (ENCS)          | Yes |
| Korea                       | Existing Chemicals List (ECL)                                     | Yes |
| New Zealand                 | New Zealand Inventory   | No  |
| Philippines                 | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory                     | Yes |

\*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

## SECTION 16: Other information

Issue Date            11/07/2019  
Revision Date        06/26/2023

### 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.