# Safety Data Sheet

## Hydrochloric Acid

Revision Date: March 19, 2021
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Document No.: DIM-SDS-003-004

## Section 1: Identification of the substance/mixture and of the supplier

### 1.1 Product identifier

Product name: Hydrochloric acid solution
CAS registry no.: 7647-01-0

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

Identified uses: Chemical manufacturing, pH control and neutralization, water treatment, scale removal, regeneration of ion exchangers, laboratory reagent, pickling and cleaning of metals, ore refining, food processing, oil- and gas-well treatment, leather processing, industrial and household cleaning

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

Company: International Chemical Industries, Inc.
KM 32 McArthur Highway, Tuktukan
Guiguinto, Bulacan 3015
Telephone: +6344-794-0444/45
Fax: +6344-794-4104
Toll free: 1-800-1888-6800

### 1.4 Emergency telephone number

Emergency: +6344-794-0444/45

## Section 2: Hazards identification

### 2.1 Classification of the substance/mixture

Classification according to GHS:
Corrosive to metals - Category 1 (H290)
Skin Corrosion - Category 1B (H314)
Serious Eye Damage/Eye Irritation - Category 1 (H318)
Specific Target Organ Toxicity Single Exposure - Category 3 (H335)

### 2.2 Label elements

Labelling according to GHS:
Pictograms:

GHS07

GHS05

| | | |
|---|---|---|
| Signal Word: | Danger | |
| Hazard Statements: | H290 | May be corrosive to metals. |
| | H314 | Causes severe skin burns and eye damage. |
| | H318 | Causes serious eye damage. |
| | H335 | May cause respiratory irritation. |
| Precautionary Statemer | P233 | Keep container tightly closed. |
| | P260 | Do not breathe dust/fume/gas/mist/vapours/spray. |
| | P264 | Wash hands thoroughly after handling. |
| | P280 | Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. |
| | P285 | In case of inadequate ventilation wear respiratory protection. |
| | 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 [or 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. |
| | P403 + P233 | Store in a well-ventilated place. Keep container tightly closed. |
| | P406 | Store in corrosive resistant container with a resistant inner liner. |

### 2.3 Other hazards

No data available.

## Section 3: Composition/information on ingredients

### 3.1 Substances

Not Applicable.

### 3.2 Mixtures

| | |
|---|---|
| Concentration: | 15%, 28%, & 31-33% by weight |
| Synonyms: | Muriatic Acid, Hydrogen Chloride |
| Chemical Formula: | HCl |
| Molecular Weight: | 36.46 g/mole |
| CAS Registry No: | 7647-01-0 |

## Section 4: First aid measures

### 4.1 Description of first aid measures

| | |
|---|---|
| General Advice: | Show this data sheet to the doctor in attendance. |
| Inhalation: | Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. |
| Skin Contact: | In case of contact, immediately flush skin with plenty of water, avoiding hot water or hard scrubbing, for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. |
| Eye Contact: | Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally to ensure thorough rinsing; delay can result to permanent injury. |
| Ingestion: | DO NOT INDUCE VOMITING! Rinse mouth with water. Never give anything by mouth to an unconscious person. Get medical attention immediately. |

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

The most important known symptoms and effects are described in section 2.2 and section 11.

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

No data available.

## Section 5: Fire fighting measures

### 5.1 Extinguishing media

**Suitable extinguisting media**

Use fire extinguising media appropriate for surrounding materials. Neutralize with soda ash or slaked lime.

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

Non-combustible. Hydrogen chloride gas may be produced in event of fire.

### 5.3 Advice 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 positive pressure mode. Structural firefighter's protective clothing is ineffective for fires involving hydrochloric acid. Stay away from ends of tanks. Cool tanks with water spray until well after fire is out.

### 5.4 Further information

No data available.

## Section 6: Accidental release measures

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

Wear respiratory protection and avoid inhalation of fumes. Review safety precautions before proceeding with cleanup. Use appropriate personal protection equipment as referred to in section 8. Evacuate area and stay upwind. Attempts to stop or reduce leak should be made only by trained personnel, when there is at most a minimal risk of injury.

### 6.2 Environmental precautions

Do not allow entry to drainage canals, water systems and soil.

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

Large spills should be contained with dikes and pumped into tanks suitable for acid storage. Use a water fog or spray to control vapors. Neutralize spill with lime (calcium hydroxide), limestone (calcium carbonate), or soda ash (sodium carbonate).

CAUTION: Limestone and soda ash will evolve CO2; ventilation should be provided in closed areas. Dike area around spill to prevent spreading, and use of absorbent material to pick up spill.

### 6.3 Reference to other sections

For personal protection, see section 8.

For disposal, see section 13.

## Section 7: Handling and storage

### 7.1 Precautions for safe handling

When diluting, the acid should always be added to water slowly and in small amounts. Never use hot water and never add water to the acid. Water added to acid can cause uncontrolled boiling and splashing.

When opening metal containers, use non-sparking tools because of the possibility of hydrogen gas being present.

### 7.2 Conditions for handling, including any incompatibilities

Storage tanks and piping for HCl should be constructed of materials recommended for corrosive products. FRP, PVC, HDPE, and/or rubber are the materials of choice for piping and storage tank.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

## Section 8: Exposure controls/personal protection

### 8.1 Control parameters

OSHA Permissible Exposure Limit (PEL): 5 ppm (Ceiling)

ACGIH Threshold Limit Value (TLV): 2 ppm (Ceiling)

A4 not classifiable as a human carcinogen

### 8.2 Exposure controls

**Appropriate engineering controls**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limit (AEL). Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

**Personal protective equipment**

**Eye/face protection**

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

**Skin protection**

Rubber or neoprene gloves and additional protection including impervious boots, apron, or coveralls, as needed in areas of unusual exposure to prevent skin contact.

**Respiratory protection**

(NIOSH Approved): If the exposure limit is exceeded, a full face piece respirator with an acid gas cartridge may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full face piece positive-pressure, air- supplied respirator.

WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres.

**Environmental exposure controls**

Do not allow entry to drainage canals, water systems and soil.

## Section 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| Appearance: | Form: Liquid<br>Color: Slightly yellowish to colorless |
| Odor: | Pungent |
| Odor threshold: | No information available. |
| pH: | <1 (Strong Acid) |
| Melting point/range: | -43°C (32%) |
| Boiling point/range: | 84°C (32%) |
| Flash point: | No data available. |
| Evaporation rate: | No data available. |
| Flammability: | No data available. |
| Upper/lower explosive limits: | No data available. |
| Vapor pressure: | 190mmHg @ 25°C |

| | |
|---|---|
| Vapor density: | No data available. |
| Relative density: | 1.15-1.164 @ 25°C |
| Water Solubility: | Soluble @ 25°C |
| Partition coefficient: | No data available. |
| Auto-ignition temperatu | No data available. |
| Decomposition temperature: | No data available. |
| Viscosity: | No data available. |

**9.2 Other information**

No data available.

## Section 10: Stability and reactivity

**10.1 Reactivity**

Reactive to the incompatible materials in section 10.5

**10.2 Chemical stability**

Stable under recommended storage conditions.

**10.3 Possibility of hazardous reactions**

Arise in contact with incompatible materials in section 10.5 and inappropriate conditions in section 10.4. Hazardous polimerization will not occur.

**10.4 Conditions to avoid**

Heat, direct sunlight. Containers may burst when heated.

**10.5 Incompatible materials**

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

**10.5 Hazardous decomposition products**

When heated to decomposition, emits toxic hydrogen chloride fumes and will react with water or steam to produce heat and toxic and corrosive fumes. Thermal oxidative decomposition produces toxic chlorine fumes and explosive hydrogen gas.

## Section 11: Toxicological information

**11.1 Information on toxicological effects**

**Mixture**

**Acute oral toxicity**

Symptoms: Severe burns in mouth, throat, oesophagus and gastrointestinal tract.
LD50 (rabbit): 900 mg/kg

**Acute inhalation toxicity**

Symptoms: Irritation of mucous membranes, coughing and shortness of breath.
LC50 (rat): 3124 ppm/1H

**Skin corrosion/irriation**
Mixture causes burns.
**Serious eye damage/eye irriation.**
Mixture causes serious eye damage and risk of blindess.
**Specific target organ toxicity (STOT) - Single Exposure**
Mixture may cause respiratory irritation.

**11.2 Further information**
No data available.

## Section 12: Ecological information

**12.1 Toxicity**
This material is expected to be toxic to aquatic life. Toxicity is primarily associated with pH.

**12.2 Persistence and degradability**
When released into the soil, this material is not expected to be biodegraded and may leak into groundwater where it will dissociate almost completely into the hydronium ion.

**12.3 Bioaccumulative potential**
It is not expected to accumulate in the food chain.

**12.4 Mobility in soil**
No data available.

**12.4 Other adverse effects**
No ecological problems are expected when the product is handled and used with due care. Large discharges may cause acidification of water and may be fatal to aquatic organisms, fish and plants.

## Section 13: Disposal considerations

**13.1 Waste treatment methods**

**Product**
Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to an approved waste facility. Dispose in accordance with all applicable regulations. Processing, use or contamination of this product may change the waste management options.

**Contaminated packaging**
Do not re-use empty containers for other substances. Empty containers should be taken to an approved waste handling site for recycling or disposal.

## Section 14: Transport information

**14.1 UN number**

DOT 1789

**14.2 UN proper shipping name**

DOT Hydrochloric Acid

**14.3 Transport hazard class(es)**

DOT Class 8

**14.4 Packing group**

DOT Group II

**14.5 Environmental hazards**

No data available.

**14.6 Transport in bulk**

Do not ship by air.

**14.7 Special precautions for user**

No data available.

## Section 15: Transport information

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

Regulated under R.A. 9165 – Comprehensive Dangerous Drugs Act

**15.2 Chemical safety assessment**

No chemical safety assessment has been carried out.

## Section 16: Other information

**NFPA rating**

| | |
|---|---|
| Health: | 3 |
| Flammability: | 0 |
| Reactivity: | 1 |