# SAFETY DATA SHEET

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

## 1. Identification

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| **Product identifier** | **Hydrochloric Acid** |
| **Other means of identification** | Muriatic Acid, HCl, hydrogen chloride in solution |
| **Recommended use** | Acidification of petroleum wells, scale removal, ore reduction, metal cleaning, industrial acidification. |
| **Recommended restrictions** | None known |

**Manufacturer/Importer/Supplier/Distributor information**

**Manufacturer**

| | |
|---|---|
| **Company name** | ERCO Worldwide |
| **Address** | 101 Highway 73 South<br>Nekoosa, WI 54457<br>USA |
| **Telephone** | (715)-887-4000 |
| **Website** | http://www.ercoworldwide.com |
| **E-mail** | productinfo@ercoworldwide.com |
| **Emergency phone number** | Canada & USA: 1-800-424-9300 (CHEMTREC) |

**Supplier** Refer to Manufacturer

## 2. Hazard(s) Identification

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|---|---|---|
| **Physical hazards** | Corrosive to metals | Category 1 |
| **Health hazards** | Acute toxicity, oral | Category 4 |
| | Acute toxicity, inhalation (mist) | Category 4 |
| | Skin corrosion | Category 1 |
| | Serious eye damage | Category 1 |
| | Specific target organ toxicity, single exposure | Category 3 respiratory tract irritation |

**Environmental hazards** Not currently regulated by OSHA, refer to Section 12 for additional information.

**OSHA defined hazards** This mixture does not meet the classification criteria according to OSHA HazCom 2012.

**Label elements**

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| **Signal word** | Danger |
| **Hazard statement** | May be corrosive to metals.<br>Harmful if swallowed.<br>Harmful if inhaled.<br>Causes severe skin burns and eye damage.<br>May cause respiratory irritation. |
| **Precautionary statement** | |
| **Prevention** | Keep only in original container. Wash hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe dust, fume, gas, mist, vapors, spray. Use only outdoors or in a well-ventilated area. Wear protective gloves, protective clothing, eye protection, face protection. |
| **Response** | **IF SWALLOWED:** Call a Poison Center or doctor if you feel unwell. Rinse mouth. Do NOT induce vomiting.<br>**IF INHALED:** Remove person to fresh air and keep comfortable for breathing. Immediately call a Poison Center or doctor.<br>**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.<br>**IF ON SKIN** (OR HAIR): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before re-use.<br><br>Absorb spillage to prevent material damage. |
| **Storage** | Store in a corrosive resistant container with a resistant inner liner. Store in a well-ventilated place. Keep container tightly closed. Store locked up. |
| **Disposal** | Dispose of contents/container in accordance with local/regional/national/international regulations. |
| **Hazard(s) not otherwise classified (HNOC)** | None known. |
| **Supplemental information** | Not applicable. |

## 3. Composition/Information on Ingredients

| Chemical name | Common name and synonyms | CAS number | Conc. % By Weight |
|---|---|---|---|
| Hydrochloric Acid | Muriatic Acid, Hydrogen Chloride in Solution | 7647-01-0 | 20 - 36.5 w/w% |
| Dihydrogen Oxide | Water | 7732-18-5 | Balance |

**Chemical name of impurities, stabilizing solvents and/or additives:** None

## 4. First-Aid Measures

**Inhalation**

Remove person to fresh air and keep comfortable for breathing. If victim is unconscious, do not give anything by mouth. Check breathing and pulse. If breathing is difficult, trained personnel should give oxygen. If breathing stops, trained personnel should provide artificial respiration. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If heart has stopped, give cardiopulmonary resuscitation (CPR) immediately. If breathing becomes rapid and bubbly, place the person in a sitting position, and give oxygen if possible. Immediately call a POISON CENTER or doctor/physician.

**Skin Contact**

Immediately flush skin with running water for at least 20 minutes. Under running water, remove contaminated clothing, shoes and leather goods. Cover wound with sterile dressing. Do not rub area of contact. Wash contaminated clothing before reuse. Leather and shoes that have been contaminated with the solution may need to be destroyed. Immediately call a POISON CENTER or doctor/physician.

**Eye Contact**

Immediately flush eyes with plenty of water for at least 20 minutes, holding the eyelid(s) open. Remove contact lenses, if present and easy to do. Continue rinsing. Take care not to rinse contaminated water into the unaffected eye or onto the face. Immediately call a POISON CENTER or doctor/physician.

**Ingestion**

Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to a victim who is unconscious or is having convulsions. If the victim can swallow, give one cup of water or milk to dilute the material in the stomach. If vomiting occurs naturally, rinse mouth and give water again. Otherwise, rinse residual hydrochloric acid from the mouth with water. Immediately call a POISON CENTER or doctor/physician.

**Most important symptoms/effects, acute and delayed**

May be fatal if inhaled. Can cause severe respiratory irritation. Symptoms may include coughing, choking and wheezing.
Inhalation could result in pulmonary edema (fluid accumulation). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed.
Direct skin contact may cause corrosive skin burns, deep ulcerations and possibly permanent scarring.
Corrosive to the eyes and may cause severe damage including blindness. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
May cause severe irritation and corrosive damage in the mouth, throat and stomach. Symptoms may include abdominal pain, vomiting, burns, perforations, bleeding and eventually death.

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| **Indication of immediate medical attention and special treatment needed** | Immediate medical attention is required. Causes chemical burns. May be fatal if inhaled or swallowed. Provide general supportive measures and treat symptomatically. Symptoms may be delayed. |
| **General information** | Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. |

## 5. Fire-Fighting Measures

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| **Suitable extinguishing media** | Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical. Use water with caution. Contact with water will generate considerable heat. |
| **Unsuitable extinguishing media** | Use chemical extinguishing agents with caution. Some chemical extinguishing agents may react with this material. |
| **Specific hazards arising from the chemical** | Not considered flammable. Vapors are heavier than air and may spread along floors. Contact with most metals will generate flammable hydrogen gas. Contact with water will generate considerable heat. Reacts violently with a wide variety of organic and inorganic chemicals including alcohol, carbides, chlorates, picrates, nitrates and metals. Toxic fumes, gases or vapours may evolve on burning. |
| **Special protective equipment and precautions for firefighters** | Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. A full-body chemical resistant suit should be worn. |
| **Firefighting equipment/instructions** | Fight fire with normal precautions from a reasonable distance. Evacuate the area promptly. Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers. Do not allow run-off from firefighting to enter drains or water courses. Dike for water control. |
| **Specific methods** | Use standard firefighting procedures and consider the hazards of other involved materials. |
| **Hazardous combustion products** | None known. In the event of fire the following can be released: Chlorine. Hydrogen. Hydrogen chloride gas. |

## 6. Accidental Release Measures

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|---|---|
| **Personal precautions, protective equipment and emergency procedures** | Immediately evacuate personnel to safe areas. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate |

protective clothing. Ventilate closed spaces before entering them. For personal protection, see section 8 of the SDS.

**Methods and materials for containment and cleaning up**

Only persons wearing protective equipment should be allowed in areas of leaks. Ventilate the area. Remove sources of ignition. Stop leak if you can do so without risk. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Use water spray to reduce vapors or divert vapor cloud drift.

Small Spills: Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand). Dilute acid with water and neutralize with Sodium Carbonate (soda ash) or lime. Use caution when neutralizing. Neutralization may release Carbon dioxide, so use caution.

Large Spills: Prevent entry into waterways, sewer, basements or confined areas. If not recoverable, dilute with water or flush to holding area and neutralize. Remove with vacuum trucks or pump to storage/salvage vessels. Contact the proper local authorities.

Never return spills to original containers for re-use. Contaminated absorbent material may pose the same hazards as the spilled product. For waste disposal, see Section 13 of the SDS.

**Environmental precautions**

Avoid discharge into drains, water courses or onto the ground. Contact local authorities in case of spillage to drain/aquatic environment.

## 7. Handling and Storage

**Precautions for safe handling**

Use only outdoors or in a well-ventilated area. Wear chemically resistant protective equipment during handling. Wear protective gloves/clothing and eye/face protection. Do not breathe mist. Do not taste or swallow. Avoid contact with eyes, skin and clothing. Keep away from heat. Keep away from metals and other incompatibles. When preparing or diluting solution, always add to water, slowly and with stirring. Never add water to the product. Label containers appropriately. Wash thoroughly after handling. When using, do not eat, drink or smoke. Avoid release to the environment.

**Conditions for safe storage, including any incompatibilities**

Store in a well-ventilated place. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. Store away from incompatible materials (see Section 10 of the SDS). Keep away from heat, sparks and open flame.

## 8. Exposure Controls/Personal Protection

**Occupational exposure limits**

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

| Components | Type | Value |
|---|---|---|
| Hydrochloric Acid (CAS 7647-01-0) | Ceiling | 7 mg/m$^3$<br>5 ppm |

**US. ACGIH Threshold Limit Values**

| Components | Type | Value |
|---|---|---|
| Hydrochloric Acid (CAS 7647-01-0) | Ceiling | 2 ppm |

**US. NIOSH: Pocket Guide to Chemical Hazards**

| Components | Type | Value |
|---|---|---|
| Hydrochloric Acid (CAS 7647-01-0) | Ceiling | 7 mg/m$^3$<br>5 ppm |

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**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. All must be corrosion resistant. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and quick drench facilities in areas of use.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Chemical goggles and face shield are recommended. Wear a full-face respirator, if needed.

**Skin protection**

**Hand protection** Wear appropriate chemical resistant gloves. Wear as appropriate: Butyl rubber. Nitrile. Neoprene. Advice should be sought from glove suppliers.

**Other** Where contact is likely, wear chemical-resistant gloves, a chemical suit, rubber boots, and chemical safety goggles plus a face shield.

**Respiratory protection** In case of insufficient ventilation, wear suitable respiratory equipment. A NIOSH/MSHA approved air-purifying respirator with the appropriate chemical cartridges or a positive-pressure, air-supplied respirator may be used to reduce exposure. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection. Respirators should be selected based on the

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| | form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134). Advice should be sought from respiratory protection specialists.<br><50ppm - Supplied air respirator, self-contained breathing apparatus, chemical cartridge respirator, or a powered air purifying respirator both with cartridge(s) to protect against hydrogen chloride.<br>>50ppm - Full-facepiece supplied air respirator, or full-facepiece self-contained breathing apparatus. Impervious gloves, body suits, boots and/or other protective clothing. |
| **Thermal Hazards** | Wear appropriate thermal protective clothing, when necessary. |
| **General hygiene considerations** | Do not breathe mist. Avoid contact with eyes, skin and clothing. When using, do not eat, drink or smoke. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse. Handle in accordance with good industrial hygiene and safety practice. |

## 9. Physical and Chemical Properties

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| **Appearance** | Colorless or slightly yellow, fuming liquid |
| **Physical state** | Liquid |
| **Form** | Fuming Liquid |
| **Colour** | Colorless to light yellow |
| **Odor** | Pungent |
| **Odor threshold** | 1 - 5 ppm (detectable) |
| **pH** | 0.1 - 1 |
| **Melting point/Freezing point** | For product range of concentrations: -71°F (-57.22°C) to -17°F (-27°C) |
| **Initial boiling point and boiling range** | For product range of concentrations: 226°F (107.78°C) to 127°F (53°C) |
| **Flash point** | Not Applicable |
| **Evaporation rate** | Not Available |
| **Flammability (solid, gas)** | Not Applicable |
| **Upper/lower flammability or explosive limits** | |
| **Flammability limit – lower (%)** | Not Applicable |
| **Flammability limit – upper (%)** | Not Applicable |
| **Explosive limit – lower (%)** | Not Applicable |
| **Explosive limit – upper (%)** | Not Applicable |
| **Vapor pressure** | For product range of concentrations: 0.01 mmHg to 200 mmHg @68°F (20°C) |
| **Vapor pressure temp.** | 68 °F (20 °C) |
| **Vapor density** | 1.268 |

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| **Relative density** | For product range of concentrations: 1.102 g/cm3 to 1.188 g/cm$^3$ |
| **Solubility (ies)** | |
| **Solubility (water)** | Soluble |
| **Solubility (other)** | Very soluble in ethanol, methanol, dioxane and tetrahydrofuran. Insoluble in hydrocarbons (e.g. n-Hexane). |
| **Partition coefficient (n-octanol/water)** | Not Available |
| **Auto-ignition temperature** | Not Applicable |
| **Decomposition temperature** | Not Available |
| **Viscosity** | Not Available |
| **Other information** | |
| **Specific gravity** | 1.18 |

## 10. Stability and Reactivity

**Reactivity**

Contact with most metals will generate flammable hydrogen gas. Contact with water will generate considerable heat. May be corrosive to metals. May be corrosive to: Aluminum. Stainless steel. Carbon steel. Copper. Bronze. Large amounts of heat can be released when mixed with strong sulfuric acid, alkalis, or with organic solvents.

**Chemical stability**

Material is stable under normal conditions.

**Possibility of hazardous reactions**

Reacts violently with a wide variety of organic and inorganic chemicals including alcohol, carbides, chlorates, picrates, nitrates and metals. Aldehydes and epoxides in the presence of hydrochloric acid cause violent polymerization. Alcohol and glycols in the presence of hydrochloric acid lead to dehydration reactions.

**Conditions to Avoid**

Avoid high temperatures. Avoid contact with incompatible materials. Do not use in areas without adequate ventilation.

**Incompatible materials**

Metals. Bases. Strong oxidizing agents. Strong reducing agents. Aldehydes. Epoxides. Carbides. Picrates. Nitrates. Alcohols. Fluorine. Water, moisture. Strong acids. Acetylides. Borides.
METALS (e.g. steel, aluminum, magnesium or zinc) - extremely flammable hydrogen gas is released on reaction with many common metals.
SODIUM - explodes on contact.
BASES (e.g. sodium hydroxide, potassium hydroxide, ammonium hydroxide, amines, 2-aminoethanol or ethyleneimine) - react violently generating heat and pressure.
FORMALDEHYDE - can react to form the potent human carcinogen, bis(chloromethyl) ether.
OXIDIZING AGENTS (e.g. hydrogen peroxide, chlorates or chlorites) - may react generating heat and very toxic and corrosive chlorine gas.

REDUCING AGENTS (e.g. metal hydrides) - reaction may produce extremely flammable hydrogen gas, heat and fire.
PERCHLORIC ACID - decomposes spontaneously and violently.
SULFURIC ACID - dehydrates concentrated hydrochloric acid to release some 250 volumes of hydrogen chloride gas. In a closed tank, sufficient gas may be formed to cause the tank to burst violently.
POTASSIUM PERMANGANATE - a sharp explosion may be produced on adding concentrated hydrochloric acid to potassium permanganate.
ALDEHYDES or EPOXIDES - hydrochloric acid may catalyze violent polymerization, generating heat and pressure.
FLUORINE - incandesces on contact. Aqueous solutions produce flame.
ACETYLIDES (e.g. cesium acetylide or rubidium acetylide), BORIDES (e.g. magnesium boride), CARBIDES (e.g. rubidium carbide), PHOSPHIDE (e.g. uranium phosphide) or SILICIDES (e.g. lithium silicide) - react producing spontaneously flammable gases (e.g. acetylene, borane, phosphine or silane, respectively).
HEXALITHIUM DISILICIDE - incandesces in concentrated acid; flammable silanes (silicon hydrides) are evolved on contact with dilute acid.
OTHER - Mixing 36% hydrochloric acid with acetic anhydride or chlorosulfonic acid or oleum or propiolactone or propylene oxide or vinyl acetate in a closed container caused the temperature and pressure to increase.

**Hazardous decomposition products**

None known. In the event of fire the following can be released: Chlorine. Hydrogen. Hydrogen chloride gas.
HCl gas evolution from the solution is accelerated by heating.

## 11.Toxicological Information

**Information on likely routes of exposure**

**Inhalation**

Harmful if inhaled. Vapour or mist can cause irritation of the nose, throat and upper respiratory tract.

**Skin contact**

Causes severe skin burns and eye damage. Not expected to be absorbed through the skin.

**Eye contact**

Causes serious eye damage. Low concentration of vapour or mist can be irritating, causing redness.

**Ingestion**

Harmful if swallowed. Causes digestive tract burns with consequent pain, nausea, vomiting, thirst, diarrhea, circulatory collapse and possible death.

**Symptoms related to the physical, chemical and toxicological characteristics**

Can cause severe respiratory irritation. Symptoms may include coughing, choking and wheezing. Inhalation could result in pulmonary edema (fluid accumulation). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed. May cause severe irritation and corrosive

damage in the mouth, throat and stomach. Symptoms may include abdominal pain, vomiting, burns, perforations, bleeding and eventually death. Direct skin contact may cause corrosive skin burns, deep ulcerations and possibly permanent scarring. Corrosive to the eyes and may cause severe damage including blindness. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

**Information on toxicological effects**

**Acute toxicity** Harmful if inhaled. Harmful if swallowed.

| **Components** | **Species** | **Test Results** |
|---|---|---|
| Hydrochloric Acid (CAS 7647-01-0) | | |
| **Acute** | | |
| *Dermal* | | |
| $LD_{50}$ | Rabbit | > 5010 mg/kg |
| *Inhalation* | | |
| $LC_{50}$ | Rat | 1.05 - 1.175 mg/l, 4 Hours (mist)<br>1405 ppm, 4 Hours (Hydrogen chloride gas) |
| *Oral* | | |
| $LD_{50}$ | Rat | 238 - 277 mg/kg |
| | Rabbit | 900 mg/kg |

**Skin corrosion** Hazardous by OSHA criteria.
Category 1. Causes severe skin burns.

**Serious eye damage** Hazardous by OSHA criteria.
Category 1. Causes serious eye damage.

**Respiratory or skin sensitization**

**Respiratory sensitization** Not expected to be a respiratory sensitizer.

**Skin sensitizer** This product is not expected to be a skin sensitizer.

**Germ cell mutagenicity** Not expected to be mutagenic in humans.

**Carcinogenicity** This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

**Reproductive toxicity** This product is not expected to cause reproductive or developmental effects.

**Specific target organ toxicity - single exposure** Hazardous by OSHA criteria.
Category 3. May cause respiratory irritation.

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| **Specific target organ toxicity - repeated exposure** | Not classified as a specific target organ toxicity - repeated exposure. |
| **Aspiration toxicity** | This product is not classified as an aspiration hazard. |
| **Chronic effects** | Chronic skin contact with low concentrations may cause dermatitis. In extreme cases, tooth erosion could result. |

## 12. Ecological Information

**Ecotoxicity** Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems. However, Hydrochloric acid dissociates in water and will be neutralized by naturally occurring alkalinity. The acid will permeate soil, dissolving some soil material and will be somewhat neutralized. The ingredient ecotoxicity data appearing below is expected to be primarily associated with pH.

| Components | | Species | Test Results |
|---|---|---|---|
| Hydrochloric Acid (CAS 7647-01-0) | | | |
| **Aquatic** | | | |
| *Acute* | | | |
| Algae | $EC_{50}$ | Green algae (*Selenastrum capricornutum*) | 0.492 mg/l, 72 hours |
| Crustacea | $EC_{50}$ | Water flea (*Daphnia magna*) | 0.492 mg/l, 48 hours |
| Fish | $LC_{50}$ | Carp (*Cyprinus carpio communis*) | 4.92 mg/l, 96 hours |
| *Chronic* | | | |
| Algae | NOEC | Green algae (*Selenastrum capricornutum*) | 0.097 mg/l, 72 hours |

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|---|---|
| **Persistence and degradability** | No data is available on the degradability of this product. Biodegradation is not applicable to inorganic substances. |
| **Bioaccumulative potential** | No accumulation in living organisms is expected due to high solubility and dissociation properties. |
| **Mobility in soil** | High water solubility indicates a high mobility in soil. |
| **Other adverse effects** | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. |

## 13. Disposal Considerations

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water

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| | supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents and containers in accordance with local/regional/national/international regulations. Contaminated materials can be neutralized with soda ash ($Na_2CO_3$), lime (CaO), or limestone ($CaCO_3$). The residual sludge can be shoveled into containers for disposal. |
| **Local disposal regulations** | Dispose in accordance with all applicable regulations. |
| **Hazardous waste code** | The waste code should be assigned in discussion between the user, the producer and the waste disposal company. |
| **Waste from residues / unused products** | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). |
| **Contaminated packaging** | Empty containers should be taken to an approved waste handling site for recycling or disposal.<br>Since emptied containers may retain product residue, follow label warnings even after container is emptied. |

## 14. Transport Information

**DOT**

| | | |
|---|---|---|
| **UN number** | | UN1789 |
| **UN proper shipping name** | | Hydrochloric Acid |
| **Transport hazard class(es)** | | |
| | **Class** | 8 |
| | **Subsidiary risk** | None |
| | **Label(s)** | 8 |
| **Packing group** | | II |
| **Special precautions for user** | | Read safety instructions, SDS and emergency procedures before handling.<br>US CERCLA Reportable Quantity (RQ): 5000 lbs / 2270 kg |
| **Special provisions** | | A3, A6, B3, B15, IB2, N41, T8, TP2, TP12 |
| **Packaging exceptions** | | 154 |
| **Packaging non bulk** | | 202 |
| **Packaging bulk** | | 242 |

**IATA**

| | |
|---|---|
| **UN number** | UN1789 |
| **UN proper shipping name** | Hydrochloric Acid |
| **Transport hazard class(es)** | |
| **Class** | 8 |
| **Subsidiary risk** | None |
| **Packing group** | II |
| **Environmental hazards** | No |
| **ERG Code** | 8L |
| **Special precautions for user** | Read safety instructions, SDS and emergency procedures before handling. |
| **Other information** | |
| **Passenger and cargo aircraft** | Allowed |
| **Cargo aircraft only** | Allowed |

**IMDG**

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|---|---|
| **UN number** | UN1789 |
| **UN proper shipping name** | Hydrochloric Acid |
| **Transport hazard class(es)** | |
| **Class** | 8 |
| **Subsidiary risk** | None |
| **Packing group** | II |
| **Environmental hazards** | |
| **Marine pollutant** | No |
| **EmS** | F-A, S-B |
| **Special precautions for user** | Read safety instructions, SDS and emergency procedures before handling. |

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not Available

**DOT**


**IATA; IMDG**

## 15. Regulatory Information

**US federal regulations**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

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|---|---|---|
| **TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)** | Not regulated. | |
| **CERCLA Hazardous Substance List (40 CFR 302.4)** | Hydrochloric Acid (CAS 7647-01-0) | Listed. |
| **SARA 304 Emergency release notification** | Hydrochloric Acid (CAS 7647-01-0) | 5000 LBS |
| **OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)** | Not listed. | |

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

**Hazard categories**

Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - Yes

**SARA 302 Extremely hazardous substance**

| Chemical name | CAS number | Reportable quantity | Threshold planning quantity | Threshold planning quantity, lower value | Threshold planning quantity, upper value |
|---|---|---|---|---|---|
| Hydrochloric Acid | 7647-01-0 | 5000 | 500 lbs | | |

**SARA 311/312 Hazardous chemical** No

**SARA 313 (TRI reporting)**

| Chemical name | CAS number | % by wt. |
|---|---|---|
| Hydrochloric Acid | 7647-01-0 | 20-36.5 |

**Other federal regulations**

| | |
|---|---|
| **Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List** | Hydrochloric Acid (CAS 7647-01-0) |

| | | |
|---|---|---|
| **Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)** | Hydrochloric Acid (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** | Hydrochloric Acid (CAS 7647-01-0) | 6545 |
| **Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))** | Hydrochloric Acid (CAS 7647-01-0) | 20 % WV |
| **DEA Exempt Chemical Mixtures Code Number** | Hydrochloric Acid (CAS 7647-01-0) | 6545 |

**US state regulations**

| | | |
|---|---|---|
| **US. Massachusetts RTK - Substance List** | Hydrochloric Acid (CAS 7647-01-0) | |
| **US. New Jersey Worker and Community Right-to-Know Act** | Hydrochloric Acid (CAS 7647-01-0) | 500 lbs |
| **US. Pennsylvania RTK - Hazardous Substances** | Hydrochloric Acid (CAS 7647-01-0) | |
| **US. Rhode Island RTK** | Hydrochloric Acid (CAS 7647-01-0) | |
| **US. California Proposition 65** | California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. | |

**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 |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | Yes |
| Korea | Existing Chemicals List (ECL) | Yes |
| New Zealand | New Zealand Inventory | Yes |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16.Other Information

**Issue date** 3/30/2022
**Revision #** 6
**Revision Indicator** Clarified precautionary statements and address updated.
**List of abbreviations**
ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation and Liability Act of 1980
CFR: Code of Federal Regulations
DOT: Department of Transportation
DSL: Domestic Substance List
EC: European Community
EINECS: European Inventory of Existing Commercial Chemical Substances
EPA: Environmental Protection Agency
EPCRA: Emergency Planning and Community Right-to-Know Act
HSDB® - Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
IATA: International Air Transport Association
IBC: Intermediate Bulk Container

IMDG: International Maritime Dangerous Goods
LC: Lethal Concentration
LD: Lethal Dose
NOEC: No observable effect concentration
NTP: National Toxicology Program
OECD: Organisation for Economic Co operation and Development
OSHA: Occupational Safety and Health Administration
PPE: Personal Protective Equipment
RCRA: Registry of Toxic Effects of Chemical Substances
RTECS: Registry of Toxic Effects of Chemical Substances
SARA: Superfund Amendments and Reauthorization Act
SDS: Safety Data Sheet
STEL: Short Term Exposure Limit
TLV: Threshold Limit Values
TWA: Time Weighted Average

**References**

ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices (2014) International Agency for Research on Cancer Monographs (2014)
Canadian Centre for Occupational Health and Safety, CCInfoWeb Databases, 2014 (Chempendium, RTECs, HSDB, INCHEM)
Material Safety Data Sheet from manufacturer.
OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2014.

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Information presented in this SDS is furnished in accordance with OSHA's Hazard Communication Standard (HCS) 2012.

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