

Material Safety Data Sheet

HYDROCHLORIC ACID

Print Date: March 2004

SECTION 1 – Chemical Product and Company Identification

MSDS Name: HYDROCHLORIC ACID

MSDS Preparation Date: 02-2004, Supersedes 02-2001, 02-98

Synonyms or Generic ID: Muriatic acid, Chlorohydric acid, hydrogen chloride, spirits of salt.

Seastar Product Codes: IQ-04-0500, IQ-04-1000, IQ-04-1000HDPE, IQ-04-1000R, IQ-04-2500, IQ-04-2500-6, IQ-04-2500-S, IQ-04-25SK, IQ-04-25SK6, IQ-04-25SKS, IQ-04-4000, IQ-04-DRUM, IQ-04-200L, BA-04-0250, BA-04-0500, BA-04-1000, BA-04-1000-02N, BA-04-1000-2N, BA-04-1000-4N, BA-04-1000-6N, BA-04-1000-10N, BA-04-2000, CP-04-1000P400, CP04-1000P400, OVERFLOW-04

Canadian TDG Classification: 8 PKG Gr II

Formula: HCl

PIN (UN# / NA#): UN1789

Molecular Wt: 36.46

Canadian WHMIS Class: Class E; Class D Div 1 Sub A.

Supplier: Seastar Chemicals Inc, PO Box 2219, 2045 Mills Road West, Sidney, BC, Canada V8L 3S8

Tel: (250) 655-5880, **Fax:** (250) 655-5888

CANUTEC (CAN): (613)-996-6666

SECTION 2 – Composition/Information on Ingredients

CAS #	Chemical Name	Percent	EINECS/ELINCS	TLV	Hazard
7647-01-0	Hydrogen chloride	30-38%	231-595-7	(Ceiling) 5 ppm (7 mg/m ³) (ACGIH)	Corrosive/Poison
7732-18-5	Water	Balance	231-791-2	Not established	N/ap

Hazard Symbols: C

Risk Phrases: 34 37

SECTION 3 – Hazards Identification

EMERGENCY OVERVIEW

Appearance: Clear, colorless.

Danger! Corrosive. Sensitizer. May cause severe respiratory and digestive tract irritation with possible burns. Causes eye and skin burns

Target Organs: None.

Potential Health Effects

Primary Route(s) of Entry: Inhalation and ingestion. Skin contact. Eye contact.

Effects of Acute Exposure: Harmful by ingestion, inhalation or skin absorption. May cause permanent damage.

LD50/LC50: CAS# 7332-18-5: Oral, rat: LD50 – >90 mL/kg.

CAS# 7647-01-0: Inhalation, mouse: LC50 = 1108 ppm/1H, Inhalation, rat: LC50 = 3124 ppm/1H, Oral, rabbit: LD50 = 900 mk/kg

Eyes: May cause irreversible eye injury. Vapor or mist may cause irritation and severe burns. Contact with liquid is corrosive to the eyes and causes severe burns. May cause painful sensitisation to light. May cause conjunctivitis May cause permanent damage.

Skin: May be absorbed through the skin in harmful amounts. Contact with liquid is corrosive and causes severe burns and ulceration. May cause photosensitization in certain individuals.

Ingestion: May cause circulatory system failure. Causes severe digestive tract burns with abdominal pain, vomiting, and possible death. May cause corrosion and permanent tissue destruction of the esophagus and digestive tract.

Inhalation: Causes severe respiratory tract inflammation. Destructive to tissues of mucous membranes. Coughing, difficulty breathing, pulmonary edema, collapse, respiratory system and lung damage, possible coma and possibly death.

Effects of Chronic Exposure: Erosion of the teeth, ulceration of the nose, mouth and gums, bronchitis. Target organs: skin, eyes, lungs, respiratory system. To the best of our knowledge the chronic toxicity of this substance has not been fully investigated.

SECTION 4 – First Aid Measures

Eyes: Immediately flush eyes with large amounts of water for at least 30 minutes, holding lids apart to ensure flushing of the entire surface. Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed.

Skin: Get medical aid immediately. Immediately flush skin with copious quantities of water for at least 30 minutes while removing contaminated clothing and shoes. Call a physician. Wash clothing before re-use.

Ingestion: Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Consult a physician immediately. Never give anything by mouth to an unconscious person.

Inhalation: Remove patient to fresh air. Administer approved oxygen supply if breathing is difficult. Administer artificial respiration or CPR if breathing has ceased. Call a physician.

Notes to Physician: Treat symptomatically and supportively. **Antidote:** No specific antidote exists.

SECTION 5 – Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Not flammable, but reacts with most metals to form flammable hydrogen gas. Use water spray to keep fire-exposed containers cool. Contact with metals may cause generation of flammable concentrations of hydrogen gas. Emits toxic fumes under fire conditions. Hazardous Combustion Products: Hydrogen chloride gas.

Extinguishing Media: Substance is non-flammable; use agent most appropriate to extinguish surrounding fire. Water spray. Carbon dioxide.

Auto-ignition Temperature: Not available.

Flash Point: Not available.

NFPA Rating: Health 3; Flammability 0; Reactivity 1

Explosion Limits: Lower: Not available. Upper: Not available.

SECTION 6 – Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Large spills may be neutralised with dilute alkaline solutions of soda ash, or lime. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite.

Steps to be taken in case material is released or spilled: Evacuate and ventilate the area. Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves. Cover with soda ash or lime. Place in a suitable container and mark for disposal. Wash spill site after material pick-up is complete.

Waste disposal method: According to all applicable regulations. Avoid run-off.

SECTION 7 – Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before re-use. Use with adequate ventilation. Do not get on skin or in eyes. Do not ingest or inhale. Do not wash down the drain. Wash well after use. In accordance with good storage and handling practices. Do not allow smoking or food consumption while handling.

Storage: Keep away from heat and flame. Do not store in direct sunlight. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep tightly closed. Do not add any other material to the container.

Storage Code: White.

SECTION 8 – Exposure Control/Personal Protection

Engineering Controls: Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits:

Chemical Name	ACGH	NIOSH	OSHA
Hydrogen chloride	None listed.	C5 ppm; C 7 mg/m ³	C5 ppm; C 7 mg/m ³
Water	None listed.	None listed.	None listed.

OSHA Vacated PELs

Personal Protective Equipment

Eyes: Wear appropriate protective face shield and eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133.

Skin: Wear appropriate protective neoprene gloves to prevent skin exposure. Neoprene apron or clothing sufficient to protect skin.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respiratory Protection: Follow the OSHA respirator regulations found in 29CFR 1910.134. Always use a NIOSH-approved respirator when necessary. If more than TLV, do not breathe vapour. Wear self-contained breathing apparatus.

Use only in a chemical fume hood. Adequate ventilation to maintain vapour/dust below TLV.

Ventilation: Use only in a chemical fume hood. Adequate ventilation to maintain vapour/dust below TLV.

Other Protective Equipment: Make eye bath and emergency shower available.

SECTION 9 – Physical and Chemical Properties

Physical State: Liquid

Appearance: clear, colorless

Odor: strong odor – pungent odor

pH: 1.1 (0.1 N sol)

Vapor Pressure: 160 mm Hg

Vapor Density: 1.2 57 (Air = 1)

Evaporation Rate: 2.0 (Butyl acetate = 1)

Viscosity: No information available.

Boiling Point: 230°F

Freezing/Melting Point: -101°F

Decomposition Temperature: 3239.6°F

Solubility: 823 g/L water at 32°F

Specific Gravity/Density: 1.16-1.19 (Water = 1)

Molecular Formula: HCl

Molecular Weight: 36.46

SECTION 10 – Stability and Reactivity

Chemical Stability: Stable under temperatures and pressures.

Conditions to Avoid: Incompatible materials, light.

Incompatibilities with Other Materials: Acetate, acetic anhydride, alcohols + hydrogen cyanide, 2-aminoethanol, ammonium hydroxide, calcium carbide, calcium phosphide, cesium acetylene carbide, cesium carbide, chlorosulfonic acid, 1,1-difluoroethylene, ethylene diamine, ethyleneimine, fluorine, lithium silicide, magnesium boride, mercuric sulfate, oleum, perchloric acid, potassium permanganate, b-propiolactone, propylene oxide, rubidium acetylene carbide, rubidium carbide, silver perchlorate + carbon tetrachloride, sodium, sodium hydroxide, sulfuric acid, uranium phosphide, vinyl acetate. Substance polymerizes on contact with aldehydes or epoxides. Reacts with most common metals to produce hydrogen. Amines, metal oxides, acetic anhydride, formaldehyde, alkalies, carbonates, strong bases, nitric acid, oxidizing agents, cyanides, sulphides, fluorides, phosphides, acetylides, bromides, carbides, silicides.

Hazardous Decomposition Products: Hydrogen chloride, hydrogen gas.

Hazardous Polymerization: May occur.

SECTION 11 – Toxicological Information

RTECS: CAS# 7332-18-5: ZC0110000. CAS# 7647-01-0: MW4025000.

LD50/LC50: CAS# 7332-18-5: Oral, rat: LD50 = >90 mL/kg.

CAS# 7647-01-0: MW4025000. Inhalation, mouse:

LC50 = 1108 ppm/1H, Inhalation, rat: LC50 = 3124 ppm/1H,

Oral, rabbit: LD50 = 900 mg/kg

Carcinogenicity: CAS# 7332-18-5: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65. CAS#

7647-01-0: ACGIH: Not listed. California: Not listed. NIOSH: Not listed. NTP: Not listed. OSHA: Not listed. IARC: Group 3.

Epidemiology: No information available.

Teratogenicity: Embryo or Fetus: Stunted fetus, ihl-rat TCLo = 450 ml/m³/1H Specific Developmental Abnormalities: homeostasis, ihl-rat TCLo = 450 mg/m³/1H.

Reproductive: No information available.

Mutagenicity: No information available.

Neurotoxicity: No information available.

SECTION 12 – Ecological Information

Ecotoxicity: No information available.

Trout LC100=10 mg/L/24H Shrimp LC50=100-330 ppm Starfish LC50=100-330 mg/L/48-96H Shore crab LC50=240 mg/L/48H Chronic plant toxicity=100 ppm.

Environmental: Substance will neutralize soil carbonate-based components.

Physical: No information available

Other: None.

SECTION 13 – Disposal Considerations

Dispose of in a manner consistent with federal, provincial/state/territorial, and local regulations.

RCRA D-Maximum Concentration of Contaminants: None of the components are on this list.

RCRA D Series – Chronic Toxicity Reference Levels: None of the components are on this list.

RCRA F Series Wastes: None of the components are on this list.

RCRA P Series Wastes: None of the components are on this list.

RCRA U Series Wastes: None of the components are on this list.

RCRA Substances Banned from Land Disposal: None of the components are on this list.

SECTION 14 – Transport Information

Proper Shipping Name: HYDROCHLORIC ACID, SOLUTION

Hazard Class: 8 **UN Number:** UN1789

Packing Group: II

SECTION 15 – Regulatory Information

US Federal

TSCA: CAS# 7332-18-5 is listed on the TSCA Inventory. CAS# 7647-01-0 is listed on the TSCA Inventory.

Health and Safety Reporting List: None of the components are on this list.

Chemical Test Rules: None of the components are on this list.

TSCA Section 12b: None of the components are on this list.

TSCA Significant New Use Rule (SNUR): None of the components are on this list.

CERCLA Reportable Quantities (RQ): CAS# 7647-01-0: final RQ = 5000 pounds (2270 kg).

SARA Threshold Planning Quantities (TPQ): CAS# 7647-01-0: TPQ = 500 pounds.

SARA Hazard Categories: CAS# 7647-01-0: acute.

SARA Section 313: This material contains Hydrogen chloride (CAS# 7647-01-0, 36-38%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

US State

State Right to Know: Hydrogen chloride can be found on the following state Right-to-Know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

California Prop 65: No information available.

California No Significant Risk Level: No information available.

European/International Regulations

European Labelling in Accordance with EC Directives:

Hazard Symbols: Risk Phrases: R37 Irritating to respiratory system. R37 Irritating to Respiratory system. Safety Phrases: S 2 Keep out of reach of children. S 3/9 Keep in a cool, well-ventilated place. S 24/25 Avoid contact with skin and eyes. S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S 28A After contact with skin, wash immediately with plenty of water.

WGKK (Water Danger/Protection): No information available.

Canadian DSL/NDSL: CAS# 7732-18-5 is listed on Canada's DSL/NDSL List. CAS# 7647-01-0 is listed on Canada's DSL/NDSL List.

Canadian WHMIS Classification: This product has a WHMIS classification of D1A, E.

Canada Ingredient Disclosure List: CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List. CAS# 7647-01-0 is listed on Canada's Ingredient Disclosure List.

Exposure Limits: OES-United Kingdom: STEL 5 ppm STEL; 7 mg/m³ STEL.

Clean Air Act – Hazardous Air Pollutants (HAPs): CAS# 7647-01-0 is listed as a hazardous air pollutant (HAP).

Clean Air Act – Class 1 Ozone Depleters: None of the components are on this list.

Clean Air Act – Class 2 Ozone Depleters: None of the components are on this list.

Clean Water Act – Hazardous Substances: CAS# 7647-01-0 is listed as a Hazardous Substance under CWA.

Clean Water Act – Priority Pollutants: None of the components are on this list.

Clean Water Act – Toxic Pollutants: None of the components are on this list.

OSHA – Highly Hazardous: CAS# 7647-01-0 is considered highly hazardous by OSHA.

SECTION 16 – Other Information

The statements contained herein are offered for informational purposes only and are based upon technical data. Seastar Chemicals Inc believes them to be accurate but does not purport to be all-inclusive. The above-stated product is intended for use only by persons having the necessary technical skills and facilities for handling the product at their discretion and risk. Since conditions and manner of use are outside our control, we (Seastar Chemicals Inc) make no warranty of merchantability or any such warranty, express or implied with respect to information and we assume no liability resulting from the above product or its use. Users should make their own investigations to determine suitability of information and product for their particular purposes.