

Material Safety Data Sheet

Hydrochloric Acid 37% Solution

Section 1 - Chemical Product and Company Identification

MSDS Name:

Hydrochloric Acid 37% Solution

Catalog Numbers:
 A144500LB01, BW6250, BW6685, BW6700, BW6740, BW6741, BW6742, BW6743, BW6744, BW6745,
 BW6746, BW6747, BW675003, BW675005, BW675007, BW675009, BW675010, BW675050, BW6750500,
 BW675065, BW675111
Synonyms:

Muriatic acid; Chlorohydric acid; Hydrogen chloride; Spirits of salt

Company Identification:
 Bridgewater Chemical
 Somerville, NJ 08876
Company Phone Number:

(800) 537-9133

Emergency Phone Number:

(800) 255-3924

CHEMTREC Phone Number, US:

(800) 424-9300

CHEMTREC Phone Number, Europe:

(202) 483-7616

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name:	Percent	EINECS/ELINCS
7732-18-5	Water	62-64	231-791-2
7647-01-0	Hydrogen chloride	36-38	231-595-7

Hazard Symbols: T C



Risk Phrases: 23 35

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless to slight yellow

Danger! Corrosive. Mutagen. Hygroscopic. May be harmful if swallowed. May cause severe respiratory tract irritation with possible burns. May cause severe digestive tract irritation with possible burns. Causes eye and skin burns. May cause fetal effects based upon animal studies. Possible sensitizer.

Target Organs: teeth, circulatory system.

Material Safety Data Sheet

Hydrochloric Acid 37% Solution

Potential Health Effects

Eye:

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 sensitization to light.

Skin:

May be absorbed through the skin in harmful amounts. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Contact with liquid is corrosive and causes severe burns and ulceration.

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. May be harmful if swallowed.

Inhalation:

May cause severe irritation of the respiratory tract with sore throat, coughing, shortness of breath and delayed lung edema. Causes chemical burns to the respiratory tract. Exposure to the mist and vapor may erode exposed teeth. Causes corrosive action on the mucous membranes.

Chronic:

Prolonged or repeated skin contact may cause dermatitis. Repeated exposure may cause erosion of teeth. May cause fetal effects. Laboratory experiments have resulted in mutagenic effects. Prolonged exposure may cause conjunctivitis, photosensitization, and possible blindness.

Section 4 - First Aid Measures

Eyes:

Get medical aid immediately. Do NOT allow victim to rub or keep eyes closed. Extensive irrigation is required (at least 30 minutes). SPEEDY ACTION IS CRITICAL!

Skin:

Get medical aid immediately. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.

Ingestion:

Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately. Give milk of magnesia.

Inhalation:

Get medical aid immediately. Remove from exposure to fresh air immediately. If breathing is difficult, give oxygen. DO NOT use mouth-to-mouth respiration. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

Notes to Physician:

Do Not use sodium bicarbonate in an attempt to neutralize the acid.

Antidote:

Do Not use oils or ointments in eye.

Material Safety Data Sheet

Hydrochloric Acid 37% Solution

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. Water runoff can cause environmental damage. Dike and collect water used to fight fire. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Not flammable, but reacts with most metals to form flammable hydrogen gas. Use water spray to keep fire-exposed containers cool. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Reaction with water may generate much heat which will increase the concentration of fumes in the air. Containers may explode when heated.

Extinguishing Media:

For large fires, use water spray, fog, or alcohol-resistant foam. Substance is nonflammable; use agent most appropriate to extinguish surrounding fire. Do NOT get water inside containers. Do NOT use straight streams of water. Most foams will react with the material and release corrosive/toxic gases. Cool containers with flooding quantities of water until well after fire is out. For small fires, use carbon dioxide (expect for Cyanides), dry chemical, dry sand, and alcohol-resistant foam.

NFPA Rating:

(estimated) Health: 3; Flammability: 0; Reactivity: 0

Section 6 - Accidental Release Measures

General Information:

Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Large spills may be neutralized with dilute alkaline solutions of soda ash, or lime. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Provide ventilation. Do not get water inside containers. A vapor suppressing foam may be used to reduce vapors. Cover with dry earth, dry sand, or other non-combustible material followed with plastic sheet to minimize spreading and contact with water.

Section 7 - Handling and Storage

Handling:

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well ventilated area. Contents may develop pressure upon prolonged storage. Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Do not ingest or inhale. Discard contaminated shoes. Use caution when opening. Keep from contact with moist air and steam.

Storage:

Do not store in direct sunlight. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Corrosives area. Do not store in metal containers. Store protected from moisture. Do not store near flammable or oxidizing substances (especially nitric acid or chlorates).

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name:	ACGIH	NIOSH	OSHA
-----------------------	--------------	--------------	-------------

Material Safety Data Sheet

Hydrochloric Acid 37% Solution

Water
 Hydrogen chloride
 OSHA Vacated PELs

None listed.
 C 5 ppm; C 7.5 mg/m3

None listed.
 50 ppm IDLH

None listed.
 C 5 ppm; C 7 mg/m3 ;

Personal Protective Equipment

Eyes:

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:

Wear neoprene or polyvinyl chloride gloves to prevent exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

A respiratory protection program that meets OSHA's 29 CFR §1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

Section 9 - Physical and Chemical Properties

Physical State: Clear liquid
Color: colorless to slight yellow
Odor: strong, pungent
pH: 0.01
Vapor Pressure: 5.7 mm Hg @ 0°C
Vapor Density: 1.26
Evaporation Rate: > 1.00 (N-butyl acetate)
Viscosity: No information found.
Boiling Point: 81.5-110°C @ 760 mmHg
Freezing/Melting Point: -74°C
Autoignition Temperature: Not applicable.
Explosion Limits: Lower: Not available. Upper: Not available.
Flash Point: Not applicable.
Decomposition Temperature: No information found.
Solubility in water: Miscible.
Specific Gravity/Density: 1.0-1.2
Molecular Formula: HCl.H₂O
Molecular Weight: 36.46

Section 10 - Stability and Reactivity

Chemical Stability:

Stable under normal temperatures and pressures.

Conditions to Avoid:

Mechanical shock, incompatible materials, metals, excess heat, exposure to moist air or water, bases.

Material Safety Data Sheet

Hydrochloric Acid 37% Solution

Incompatibilities with Other Materials

bases, acetic anhydride, alkali metals, aluminum, amines, copper, copper alloys, fluorine, iron, sodium hydroxide, steel, sulfuric acid, vinyl acetate, zinc, potassium permanganate, cesium acetylene carbide, rubidium acetylene carbide, rubidium carbide, sodium, chlorosulfonic acid, oleum, carbonates, perchloric acid, calcium phosphide, metal oxides, acetates, cesium carbide, moisture, beta-propiolactone, ethyleneimine, propylene oxide, lithium silicides, alcohols + hydrogen cyanide, 2-aminoethanol, ammonium hydroxide, calcium carbide, 1,1-difluoroethylene, ethylene diamine, magnesium boride, mercuric sulfate, silver perchlorate + carbon tetrachloride, uranium phosphide.

Hazardous Decomposition Products

Hydrogen chloride, chlorine, carbon monoxide, carbon dioxide, hydrogen gas.

Hazardous Polymerization

Will not occur.

Section 11 - Toxicological Information

RTECS:

CAS# 7732-18-5: ZC0110000.

CAS# 7647-01-0: MW4025000.

LD50/LC50:

CAS# 7732-18-5:

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 mg/kg.

Carcinogenicity:

CAS# 7732-18-5: 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 carcinogen

Epidemiology:

Experimental reproductive effects have been reported.

Teratogenicity:

Embryo or Fetus: Stunted fetus, Inhalation, rat TCL0=450 mg/m³/1H Specific Developmental Abnormalities: homeostatis, Inhalation, rat TCL0=450 mg/m³/1H (female 1 days pre-mating).

Reproductive:

No information available.

Mutagenicity

Cytogenetic analysis: Hamster, lung = 30 mmol/L.; Cytogenetic analysis: Hamster, ovary = 8 mmol/L.

Neurotoxicity

No information available.

Other:

Rinsed with water test: Administration into the eye (rabbit) = 5 mg/30sec (Mild).



Material Safety Data Sheet

Hydrochloric Acid 37% Solution

Section 12 - Ecological Information

Ecotoxicity:

Fish: Bluegill/Sunfish: 3.6 mg/L; 48Hr; Lethal (unspecified)

Fish: Bluegill/Sunfish: LC50; 96 Hr; pH 3.0-3.5

Environmental:

Rapidly hydrolyzes when exposed to water. Will exhibit extensive evaporation from soil surfaces. Upon transport through the soil, hydrochloric acid will dissolve some of the soil materials (especially those with carbonate bases) and the acid will neutralize to some degree.

Physical:

No information found.

Other:

No information found.

Section 13 - Disposal Considerations

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

RCRA P Series Wastes

None of the components are on this list.

RCRA U Series Wastes

None of the components are on this list.

Section 14 - Transport Information

	US DOT	IATA	IMO	RID/ADR	Canadian TDG
Shipping Name:	HYDROCHLORIC ACID	HYDROCHLORIC ACID, SOLUTION	HYDROCHLORIC ACID, SOLUTION	HYDROCHLORIC ACID, SOLUTION	HYDROCHLORIC ACID
Hazard Class:	8	8	8	8(05B)	8(9.2)
UN Number:	UN1789	UN1789	UN1789	UN1789	UN1789
Packing Group:	II	II	II		II

Section 15 - Regulatory Information

US Federal**TSCA**

CAS# 7732-18-5 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.

Material Safety Data Sheet

Hydrochloric Acid 37% Solution

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; RQ = 5000 pounds (does not meet toxicity criteria but because

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 372.

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 Depletors

None of the components are on this list.

Clean Air Act - Class 2 Ozone Depletors

None of the components are on this list.

Clean Water Act - Hazardous Substances

CAS# 7647-01-0 is listed as a Hazardous Substance under the 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.

OSHA - Specifically Regulated Chemicals**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**California No Significant Risk Level**

No information found.

No information found.

European/International Regulations**European Labelling in Accordance with EC Directives:**

Hazard Symbols: T C

Risk Phrases: R 23 Toxic by inhalation.

R 35 Causes severe burns.

Safety Phrases: S 1/2 Keep locked up and out of reach of children.

S 9 Keep container in a well-ventilated place.

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

No information found.



Material Safety Data Sheet

Hydrochloric Acid 37% Solution

United Kingdom Occupational Exposure Limits

No information found.

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 Classifications

This product has a WHMIS classification of D2A, E.

Canada Ingredient Disclosure List

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

Exposure Limits

No information found.
No information found.

Section 16 - Other Information

No information found.
MSDS Creation Date: July 6, 1999
Revision Date: Original.

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.