

DATE: 09/15/98 ACCT: 888235001  
 INDEX: DB2576766 CAT NO: A144S212 PO NBR: UNI-91684

## \*\*\* MATERIAL SAFETY DATA SHEET \*\*\*

Hydrochloric Acid 37% Solution  
 11155

## \*\*\* SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION \*\*\*

MSDS Name: Hydrochloric Acid 37% Solution

## Catalog Numbers:

S71942, S71943, S74853, S74853SC, S80038, 144J212, A142 212, A142-212, A142212, A142P 20, A142P-20, A142P20, A144 212, A144 500, A144 500LB, A144 612GAL, A144-20, A144-212, A144-500, A144-500L, A144-500LB, A144-612G, A144-612GAL, A144-612GL, A1440212LC, A144212, A144500, A144500LB, A144500LB02, A144500LDLC, A1445212LC, A144612GAL, A144C 212, A144C-2.5, A144C-212, A144C212, A144C212001, A144FP 500, A144FP500, A144P 20, A144P 500, A144P-1GA, A144P-1GAL, A144P-20, A144P20, A144P500, A144S 212, A144S 500, A144S-212, A144S-500, A144S212, A144S212EA, A144S500, A144SI 212, A144SI-21, A144SI-212, A144SI212, A466 1, A466 250, A466 500, A466-1, A466-2, A466-250, A466-500, A4661, A4662, A466250, A466500, A481 212, A481-212, A481212, A508-212, A508-500, A508212 001, A508212 002, A508212001, A508212002, A508212003, A508212004, A508212LC, A508SK212, CRNA481 212, CRNA481212, S71942SCMF, S71942SCND, S71943ND, SA431-500, SA48-1, SA48-20, SA48-4, SA48-500

## Synonyms:

Chlorohydric acid, hydrogen chloride, muriatic acid, spirits of salt.

Company Identification: Fisher Scientific

1 Reagent Lane

Fairlawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

## \*\*\* SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS \*\*\*

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

Hazard Symbols: C  
 Risk Phrases: 34 37

## \*\*\* SECTION 3 - HAZARDS IDENTIFICATION \*\*\*

## EMERGENCY OVERVIEW

Appearance: clear, colorless.

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

Target Organs: None.

## 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. May cause conjunctivitis.

## 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 irritation of upper respiratory tract with coughing, burns, breathing difficulty, and possible coma. May cause pulmonary edema and severe respiratory disturbances.

## Chronic:

Prolonged or repeated skin contact may cause dermatitis. Repeated exposure may cause erosion of teeth. May cause conjunctivitis and photosensitization.

## \*\*\* SECTION 4 - FIRST AID MEASURES \*\*\*

## Eyes:

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical aid immediately. Do NOT allow victim to rub or keep eyes closed.

## Skin:

Get medical aid. Rinse area with large amounts of water for at least

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15 minutes. Remove contaminated clothing and shoes.  
 Ingestion:  
 Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.  
 Inhalation:  
 Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.  
 Notes to Physician:  
 Treat symptomatically and supportively.

## \*\*\* 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.

## Extinguishing Media:

Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

Autoignition Temperature: Not available.

Flash Point: Not available.

NFPA Rating: Not published.

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 neutralized with dilute alkaline solutions of soda ash, or lime. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite.

## \*\*\* SECTION 7 - HANDLING and STORAGE \*\*\*

## Handling:

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Do not get on skin or in eyes. Do not ingest or inhale.

## 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.

## \*\*\* SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION \*\*\*

## Engineering Controls:

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

Chemical Name	Exposure Limits		
	ACGIH	NIOSH	OSHA - Final PELs
Hydrogen chloride	C 5 ppm; C 7.5 mg/m3	50 ppm IDLH	C 5 ppm; C 7 mg/m3
Water	none listed	none listed	none listed

## OSHA Vacated PELs:

Hydrogen chloride:

No OSHA Vacated PELs are listed for this chemical.

Water:

No OSHA Vacated PELs are listed for this chemical.

## 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 appropriate protective gloves to prevent skin exposure.

## Clothing:

Wear appropriate protective clothing to prevent skin exposure.

## Respirators:

Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

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\*\*\*\* SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES \*\*\*\*

Physical State: Liquid  
Appearance: clear, colorless  
Odor: strong odor - pungent odor  
pH: 1.1 (0.1N sol).  
Vapor Pressure: 160 mm Hg  
Vapor Density: 1.257 (Air=1)  
Evaporation Rate: 2.0 (Butyl acetate=1)  
Viscosity: Not available.  
Boiling Point: 230 deg F  
Freezing/Melting Point: -101 deg F  
Decomposition Temperature: 3239.6 deg F  
Solubility: 823g/L water at 32F.  
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 normal 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, n-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.  
**Hazardous Decomposition Products:**  
Hydrogen chloride, hydrogen gas.  
**Hazardous Polymerization:** May occur.

\*\*\*\* SECTION 11 - TOXICOLOGICAL INFORMATION \*\*\*\*

**RTECS#:**  
CAS# 7647-01-0: MW4025000  
CAS# 7732-18-5: ZC0110000  
**LD50/LC50:**  
CAS# 7647-01-0: Inhalation, mouse: LC50 =1108 ppm/1H; Inhalation,  
rat: LC50 =3124 ppm/1H; Oral, rabbit: LD50 = 900 mg/kg.  
CAS# 7732-18-5: Oral, rat: LD50 = 90 mL/kg.  
**Carcinogenicity:**  
Hydrogen chloride -  
IARC: Group 3 carcinogen  
**Water:**  
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.  
**Epidemiology:**  
No information available.  
**Teratogenicity:**  
Embryo or Fetus: Stunted fetus, ihl-rat TCLo=450 mg/m3/1H Specific  
Developmental Abnormalities: homeostasis, ihl-rat TCLo=450 mg/m3/1H.  
**Reproductive Effects:**  
No information available.  
**Neurotoxicity:**  
No information available.  
**Mutagenicity:**  
No information available.  
**Other Studies:**  
None.

\*\*\*\* SECTION 12 - ECOLOGICAL INFORMATION \*\*\*\*

**Ecotoxicity:**  
Trout LC100=10 mg/L/24H Shrimp LC50=100-330 ppm Starfish  
LC50=100-330mg/L/48H Shore crab LC50=240 mg/L/48H Chronic plant  
toxicity=100 ppm  
**Environmental Fate:**  
Substance will neutralize soil carbonate-based components.  
**Physical/Chemical:**  
No information available.  
**Other:**  
None.

\*\*\*\* SECTION 13 - DISPOSAL CONSIDERATIONS \*\*\*\*

Dispose of in a manner consistent with federal, state, and local regulations.  
RCRA D-Series Maximum Concentration of Contaminants:  
None listed.  
RCRA D-Series Chronic Toxicity Reference Levels: None  
listed.  
RCRA F-Series: None listed.  
RCRA P-Series: None listed.

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RCRA U-Series: None listed.

\*\*\*\* SECTION 14 - TRANSPORT INFORMATION \*\*\*\*

**US DOT**  
Shipping Name: HYDROCHLORIC ACID  
Hazard Class: 8  
UN Number: UN1789  
Packing Group: II  
**IMO**  
No information available.  
**IATA**  
No information available.  
**RID/ADR**  
No information available.  
**Canadian TDG**  
Shipping Name: HYDROCHLORIC ACID  
Hazard Class: 8(9.2)  
UN Number: UN1789

\*\*\*\* SECTION 15 - REGULATORY INFORMATION \*\*\*\*

**US FEDERAL**  
**TSCA**  
CAS# 7647-01-0 is listed on the TSCA inventory.  
CAS# 7732-18-5 is listed on the TSCA inventory.  
**Health & Safety Reporting List**  
None of the chemicals are on the Health & Safety Reporting List.  
**Chemical Test Rules**  
None of the chemicals in this product are under a Chemical Test Rule.  
**Section 12b**  
None of the chemicals are listed under TSCA Section 12b.  
**TSCA Significant New Use Rule**  
None of the chemicals in this material have a SNUR under TSCA.  
**SARA**  
**Section 302 (RQ)**  
CAS# 7647-01-0: final RQ = 5000 pounds (2270 kg)  
**Section 302 (TPQ)**  
CAS# 7647-01-0: TPQ = 500 pounds; RQ = 5000 pounds (does not meet toxic  
criteria but because of high production volume and recognized toxic  
ity is considered a chemical of concern)  
**SARA Codes**  
CAS # 7647-01-0: acute.  
**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.  
**Clean Air Act:**  
CAS# 7647-01-0 is listed as a hazardous air pollutant (HAP).  
This material does not contain any Class 1 Ozone depleters.  
This material does not contain any Class 2 Ozone depleters.  
**Clean Water Act:**  
CAS# 7647-01-0 is listed as a Hazardous Substance under the CWA.  
None of the chemicals in this product are listed as Priority  
Pollutants under the CWA.  
None of the chemicals in this product are listed as Toxic Pollutants  
under the CWA.  
**OSHA:**  
CAS# 7647-01-0 is considered highly hazardous by OSHA.  
**STATE**  
Hydrogen chloride can be found on the following state right to know  
lists: California, New Jersey, Florida, Pennsylvania, Minnesota,  
Massachusetts.  
Water is not present on state lists from CA, PA, MN, MA, FL, or NJ.  
California No Significant Risk Level:  
None of the chemicals in this product are listed.  
**European/International Regulations**  
**European Labeling in Accordance with EC Directives**  
Hazard Symbols: C  
Risk Phrases:  
R 34 Causes burns.  
R 37 Irritating to respiratory system.  
**Safety Phrases:**  
S 26 In case of contact with eyes, rinse immediately  
with plenty of water and seek medical advice.  
S 45 In case of accident or if you feel unwell, seek  
medical advice immediately (show the label where  
possible).  
**WGK (Water Danger/Protection)**  
CAS# 7647-01-0: 1  
CAS# 7732-18-5: No information available.  
**Canada**  
CAS# 7647-01-0 is listed on Canada's DSL/NDL List.  
CAS# 7732-18-5 is listed on Canada's DSL/NDL List.  
This product has a WHMIS classification of D1A, E.  
CAS# 7647-01-0 is not listed on Canada's Ingredient Disclosure List.  
CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.  
**Exposure Limits**  
CAS# 7647-01-0: OEL-AUSTRALIA:TWA 5 ppm (7 mg/m3). OEL-AUSTRIA:TWA 5

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ppm (7 mg/m3). OEL-BELGIUM:STEL 5 ppm (7.7 mg/m3). OEL-DENMARK:STEL 5 ppm (7 mg/m3). OEL-FINLAND:STEL 5 ppm (7 mg/m3);Skin. OEL-FRANCE:STEL 5 ppm (7.5 mg/m3). OEL-GERMANY:TWA 5 ppm (7 mg/m3). OEL-HUNGARY:STEL 5 mg/m3. OEL-JAPAN:STEL 5 ppm (7.5 mg/m3). OEL-THE NETHERLANDS:TWA 5 ppm (7 mg/m3). OEL-THE PHILIPPINES:TWA 5 ppm (7 mg/m3). OEL-POLAND:TWA 5 mg/m3. OEL-RUSSIA:STEL 5 ppm (5 mg/m3). OEL-SWEDEN:STEL 5 ppm (8 mg/m3). OEL-SWITZERLAND:TWA 5 ppm (7.5 mg/m3);STEL 10 ppm (15 mg/m3). OEL-THAILAND:TWA 5 ppm (7 mg/m3). OEL-TURKEY:TWA 5 ppm (7 mg/m3). OEL-UNITED KINGDOM:TWA 5 ppm (7 mg/m3);STEL 5 ppm (7 mg/m3). OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV. OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

## \*\*\*\* SECTION 16 - ADDITIONAL INFORMATION \*\*\*\*

MSDS Creation Date: 1/09/1995 Revision #26 Date: 12/12/1997

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 way shall Fisher 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 Fisher has been advised of the possibility of such damages.

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