



J.T. Baker Inc.
222 Red School Lane
Phillipsburg, NJ 08865

24-Hour Emergency Telephone 908-859-2151
National Response Center 800-424-8802
Chemtrec 800-424-9300

National Response In Canada
CANUTEC 613-996-6666

Outside U.S. and Canada
Chemtrec 202-483-7616

MATERIAL SAFETY DATA SHEET

FICHE
SIGNALETIQUE

HOJAS DE DATOS
DE SEGURIDAD

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers are to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals. All non-emergency questions should be directed to Customer Service (1-800-JTBAKER) for assistance.

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H3880 -03
Effective: 05/01/89

C.A.

Hydrochloric Acid

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J.T. BAKER INC., 222 Red School Lane, Phillipsburg, NJ 08865

SECTION I - PRODUCT IDENTIFICATION

Product Name: Hydrochloric Acid
Common Synonyms: Mariatic Acid; Chlorohydric Acid; Hydrogen Chloride, Aqueous
Chemical Family: Inorganic Acids
Formula: HCl
Formula Wt.: 36.46
CAS No.: 7647-01-0
NIOSH/RTECS No.: MW4025000
Product Use: Laboratory Reagent
Product Codes: 9538, 9537, 9535, 4800, 9542, 9534, 5537, 9549, 9529, 9547, 9546, 6900, 9536, 9540, 9539, 9548, 5367, 9544, 5800, 5214, 5575, 9543, 9530

PRECAUTIONARY LABELING

BAKER SAF-T-DATA* System

HEALTH SEVERE	FLAMMABILITY NONE	REACTIVITY MODERATE	CONTACT SEVERE
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Laboratory Protective Equipment

 GUGGLES & SHIELD	 LAB COAT & APRON	 VENT HOOD	 PROPER GLOVES
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U.S. Precautionary Labeling

POISON! DANGER!
CAUSES SEVERE BURNS. MAY BE FATAL IF SWALLOWED OR INHALED.
Do not get in eyes, on skin, on clothing. Do not breathe vapor. Causes damage to Respiratory system (lungs), eyes and skin. Keep in tightly closed container. Loosen closure cautiously. Use with adequate ventilation. Wash thoroughly after handling. In case of spill neutralize with soda ash or lime and place in dry container.



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PRECAUTIONARY LABELING (CONTINUED)

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International Labeling

Irritating to eyes and skin.
Keep out of reach of children. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

SAF-T-DATA* Storage Color Code: White (corrosive)

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SECTION II - COMPONENTS

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<u>Component</u>	<u>CAS No.</u>	<u>Weight %</u>	<u>OSHA/PEL</u>	<u>ACGIH/TLV</u>
Hydrochloric Acid	7647-01-0	33-40	5 ppm	5 ppm
Water	7732-18-5	60-67	N/E	N/E

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SECTION III - PHYSICAL DATA

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Boiling Point: 149°C (300°F) (at 760 mm Hg)	Vapor Pressure (mmHg): N/A
Melting Point: -25°C (-13°F) (at 760 mm Hg)	Vapor Density (air=1): 1.3
Specific Gravity: 1.18 (H ₂ O=1)	Evaporation Rate: N/A
Solubility(H ₂ O): Complete (100%)	% Volatiles by Volume: 100 (21°C)
pH: 1.0 (0.1M solution)	
Odor Threshold (ppm): N/A	Physical State: Liquid
Coefficient Water/Oil Distribution: N/A	
Appearance & Odor: Clear, colorless fuming liquid. Pungent odor.	



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SECTION IV - FIRE AND EXPLOSION HAZARD DATA
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Flash Point (Closed Cup): N/A

NFPA 704M Rating: 3-0-0

Autoignition Temperature: N/A

Flammable Limits: Upper - N/A Lower - N/A

Fire Extinguishing Media

Use extinguishing media appropriate for surrounding fire.

Special Fire-Fighting Procedures

Firefighters should wear proper protective equipment and self-contained breathing apparatus with full facepiece operated in positive pressure mode. Move containers from fire area if it can be done without risk. Use water to keep fire-exposed containers cool. Do not get water inside containers.

Unusual Fire & Explosion Hazards

May emit hydrogen gas upon contact with metal.

Toxic Gases Produced

hydrogen chloride, hydrogen

Explosion Data-Sensitivity to Mechanical Impact

None identified.

Explosion Data-Sensitivity to Static Discharge

None identified.

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SECTION V - HEALTH HAZARD DATA
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Threshold Limit Value (TLV/TWA): 7 mg/m³ (5 ppm)

TLV (Ceiling) is for Hydrogen chloride.

Short-Term Exposure Limit (STEL): Not Established

Permissible Exposure Limit (PEL): 7 mg/m³ (5 ppm)

PEL (Ceiling) is for Hydrogen chloride.

Toxicity of components



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SECTION V - HEALTH HAZARD DATA (CONTINUED)

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Intraperitoneal Mouse LD ₅₀ for Hydrochloric Acid	40	mg/kg
Oral Rabbit LD ₅₀ for Hydrochloric Acid	900	mg/kg
Inhalation-1Hr Rat LC ₅₀ for Hydrochloric Acid	3124	ppm
Intraperitoneal Mouse LD ₅₀ for Water	190	g/kg
Intravenous Mouse LD ₅₀ for Water	25	g/kg
Carcinogenicity: NTP: No	IARC: No	Z List: No OSHA Reg: No

Carcinogenicity
None identified.

Reproductive Effects
None identified.

Effects of Overexposure

INHALATION: pulmonary edema, circulatory failure, respiratory system damage, collapse, coughing, difficult breathing

SKIN CONTACT: severe burns

EYE CONTACT: severe burns

SKIN ABSORPTION: none identified

INGESTION: is harmful and may be fatal, severe burns to mouth, throat, and stomach, nausea, vomiting

CHRONIC EFFECTS: may cause teeth damage

Target Organs
respiratory system, eyes, skin

Medical Conditions Generally Aggravated by Exposure
none identified

Primary Routes of Entry
ingestion, inhalation, skin contact, eye contact



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SECTION V - HEALTH HAZARD DATA (CONTINUED)

Emergency and First Aid Procedures

- INGESTION: CALL A PHYSICIAN. If swallowed, do NOT induce vomiting. If conscious, give water, milk, or milk of magnesia.
- INHALATION: If inhaled, 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 for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before re-use.
- EYE CONTACT: In case of eye contact, immediately flush with plenty of water for at least 15 minutes.

SARA/TITLE III HAZARD CATEGORIES and LISTS

Acute: Yes Chronic: Yes Flammability: No Pressure: No Reactivity: No

- Extremely Hazardous Substance: Yes Contains Hydrogen Chloride (RQ = 1 LB, TPQ = 500 LBS)
- CERCLA Hazardous Substance: Yes Contains Hydrochloric Acid (RQ = 5000 LBS)
- SARA 313 Toxic Chemicals: Yes Contains Hydrochloric Acid
- Generic Class: C16
- TSCA Inventory: Yes

SECTION VI - REACTIVITY DATA

- Stability: Stable Hazardous Polymerization: Will not occur
- Conditions to Avoid: heat, moisture
- Incompatibles: most common metals, water, amines, metal oxides, acetic anhydride, propiolactone, vinyl acetate, mercuric sulfate, calcium phosphide, formaldehyde, alkalies, carbonates, strong bases, sulfuric acid, chlorosulfonic acid
- Decomposition Products: hydrogen chloride, hydrogen, chlorine



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SECTION VII - SPILL & DISPOSAL PROCEDURES

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Steps to be Taken in the Event of a Spill or Discharge

Wear self-contained breathing apparatus and full protective clothing. Stop leak if you can do so without risk. Ventilate area. Neutralize spill with soda ash or lime. With clean shovel, carefully place material into clean, dry container and cover; remove from area. Flush spill area with water.

J. T. Baker NEUTRASORB^R or TEAM^R 'Low Na+' acid neutralizers are recommended for spills of this product.

Disposal Procedure

Dispose in accordance with all applicable federal, state, and local environmental regulations.

EPA Hazardous Waste Number: D002 (Corrosive Waste)

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SECTION VIII - INDUSTRIAL PROTECTIVE EQUIPMENT

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Ventilation: Use general or local exhaust ventilation to meet TLV requirements.

Respiratory Protection: Respiratory protection required if airborne concentration exceeds TLV. At concentrations up to 100 ppm, a chemical cartridge respirator with acid cartridge is recommended. Above this level, a self-contained breathing apparatus is advised.

Eye/Skin Protection: Safety goggles and face shield, uniform, protective suit, neoprene gloves are recommended.

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SECTION IX - STORAGE AND HANDLING PRECAUTIONS

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SAF-T-DATA* Storage Color Code: White (corrosive)

Storage Requirements

Keep container tightly closed. Store in corrosion-proof area. Isolate from incompatible materials. Do not store near oxidizing materials.



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SECTION X - TRANSPORTATION DATA AND ADDITIONAL INFORMATION

Domestic (D.O.T.)

Proper Shipping Name: Hydrochloric acid
Hazard Class: Corrosive material (liquid)
UN/NA: UN1789 Reportable Quantity: 5000 LBS.
Labels: CORROSIVE
Regulatory References: 49CFR 172.101; 173.263

International (I.M.O.)

Proper Shipping Name: Hydrochloric acid, solution
Hazard Class: 8 I.M.O. Page: 8183
UN: UN1789 Marine Pollutants: No Packaging Group: II
Labels: CORROSIVE
Regulatory References: 49CFR 172.102; Part 176; IMO

AIR (I.C.A.O.)

Proper Shipping Name: Hydrochloric acid, solution
Hazard Class: 8 Packaging Group: II
UN: UN1789
Labels: CORROSIVE
Regulatory References: 49CFR 172.101; 173.6; Part 175; ICAO/IATA

U.S. Customs Harmonization Number: 28061000000

N/A = Not Applicable or Not Available
N/E = Not Established

The information in this Material Safety Data Sheet meets the requirements of the United States OCCUPATIONAL SAFETY AND HEALTH ACT and regulations promulgated thereunder (29 CFR 1910.1200 et. seq.) and the Canadian WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM. This document is intended only as a guide to the appropriate precautionary handling of the material by a person trained in, or supervised by a person trained in, chemical handling. The user is responsible for determining the precautions and dangers of this chemical for his or her particular application. Depending on usage, protective clothing including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/fumes.

Exposure to this product may have serious adverse health effects. This chemical may interact with other substances. Since the potential uses are so varied, Baker cannot warn of all of the potential dangers of use or interaction with other chemicals or materials. Baker warrants that

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 the chemical meets the specifications set forth on the label.
 BAKER DISCLAIMS ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED WITH REGARD
 TO THE PRODUCT SUPPLIED HEREUNDER, ITS MERCHANTABILITY OR ITS FITNESS
 FOR A PARTICULAR PURPOSE.

The user should recognize that this product can cause severe injury and
 even death, especially if improperly handled or the known dangers of use
 are not heeded. READ ALL PRECAUTIONARY INFORMATION. As new documented
 general safety information becomes available, Baker will periodically
 revise this Material Safety Data Sheet.

Note: CHEMTREC, CANUTEC, and NATIONAL RESPONSE CENTER emergency telephone
 numbers are to be used ONLY in the event of CHEMICAL EMERGENCIES involving
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 Approved by Quality Assurance Department.