

HYDROCHLORIC ACID, 37%

Material Safety Data Sheet

Manufacturer: Mallinckrodt Chemical, Inc. Distributor: Fisher Scientific  
P.O. Box 40362 9909 Veterans Memorial  
Emergency Phone Number: 314-539-1600 Houston, TX 77038

Effective Date: 09-10-86 Supersedes 08-21-85

PRODUCT IDENTIFICATION:

Synonyms: Muriatic acid

Formula CAS No.: 7847-01-0 Molecular Weight: 36.46 (HCl)

Hazardous Ingredients: Hydrogen chloride Chemical Formula: HCl

PRECAUTIONARY MEASURES

**DANGER! CORROSIVE. LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED. INHALATION MAY CAUSE LUNG DAMAGE.**

Do not get in eyes, on skin, or on clothing.

Avoid breathing mist.

Use only with adequate ventilation.

Wear thoroughly after handling.

Store in a tightly closed container.

Remove and wash contaminated clothing promptly.

This substance is classified as a POISON under the Federal Caustic Poison Act.

EMERGENCY FIRST AID

SEE SECTION 5.

Physician:

Physical Data

SECTION 1

Appearance: Clear, colorless fuming liquid.

Odor: Pungent odor of hydrogen chloride.

Solubility: Infinite in water with slight evolution of heat.

Boiling Point: 53 C (127 F); Azeotropic (Air-1): No Information  
(20.2%) boils at 109 C found.

Melting Point: -74 C (-101 F) Vapor Pressure (mm Hg): 190 @ 25 C (77 F)

Specific Gravity: 1.18 Evaporation Rate: No Information found.

NFPA Ratings: Health: 3 Flammability: 0 Reactivity: 0

Fire and Explosion

SECTION 2

Information

Fire: Can react with metals to release flammable hydrogen gas.

Explosion: Not considered to be an explosion hazard.

Fire Extinguishing Media: If involved in a fire, use water spray.

Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

Reactivity Data

SECTION 3

Stability: Stable under ordinary conditions of use and storage. Containers may burst when heated.

Hazardous Decomposition

Products: When heated to decomposition, emits toxic hydrogen chloride fumes and will react with water or steam to produce heat and toxic and corrosive

Hazardous Polymerization: Will not occur.

Incompatibilities: A strong mineral acid, concentrated hydrochloric acid is highly reactive with strong bases, metals, metal oxides, hydroxides, amines, carbonates and other alkaline materials. Incompatible with materials such as cyanides, sulfides, sulfites, and formaldehyde.

Leak/Spill Disposal Information

SECTION 4

Clean-up personnel should wear protective clothing and respiratory equipment suitable for toxic or corrosive vapors. Fit or wipe water and neutralize with alkali. Small spills (e.g., 5 gallons or less) may be neutralized with alkaline material (sodium bicarbonate, etc.). Larger spills may be neutralized with alkaline material, pieces with absorbent material (sand, earth, vermiculite). Provide forced ventilation to dissipate fumes. Dispose in a RCRA-approved waste facility or sewer. The neutralized slurry with excess water if local ordinances allow. Reportable Quantity (RQ)(CWA/CERCLA): 5000 lbs. Ensure compliance with local, state and federal regulations.

Health Hazard Information

SECTION 5

A. Exposure/Health Effects

Inhalation: Corrosive. Inhalation of vapors can cause coughing, choking, inflammation of the nose, throat, and upper respiratory tract. Inhalation of higher concentrations may cause lung damage.

Ingestion: Corrosive. Swallowing hydrochloric acid can cause immediate pain and burns of the mouth, throat, esophagus and gastrointestinal tract. May cause nausea, vomiting, and diarrhea.

Skin Contact: Corrosive. Can cause redness, pain, and severe skin burns. Concentrated solutions cause deep ulcers and discolor skin.

Eye Contact: Corrosive. Vapors are irritating and may cause damage to the eyes. Splashes may cause severe burns and permanent eye damage.

Chronic Exposure: Long-term exposure to concentrated vapors may cause erosion of teeth. Long term exposures seldom occur due to the corrosive properties of the acid.

Aggravation of Pre-existing Conditions: Persons with pre-existing skin disorders or eye disease may be more susceptible to the effects of this substance.

B. FIRST AID

Inhalation: Removal to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion: DO NOT INDUCE VOMITING. Give large quantities of water or milk if available. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin Exposure: 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 reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Eye Exposure: Wash eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

C. TOXICITY

(RTECS, 1986)

Oral rat LD50: 900 mg/kg (hydrochloric acid concentrated) Mutation references cited.

Occupational Control Measures

SECTION 6

Airborne Exposure Limits: -OSHA Permissible Exposure Limit (PEL): 5 ppm Ceiling -ACGIH Threshold Limit Value (TLV): 5 ppm Ceiling

Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

Personal Respirators (NIOSH Approved) If the TLV is exceeded a full facepiece chemical cartridge respirator may be worn. In general, up to 100 times the TLV or the maximum use concentration specified by the respirator supplier, whichever is less. Alternatively, a supplied air full facepiece respirator or airtight hood may be worn.

Skin Protection: Rubber or neoprene gloves and additional protection including impervious boots, apron, or coveralls, as needed in areas of unusual exposure to prevent skin contact.

Eye Protection: Use chemical safety goggles and/or a full face shield when using eye possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work area.

Storage and Special Information SECTION 7  
 Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect from physical damage and direct sunlight. Isolate from incompatible substances. Protect from moisture.

HYDCH Addendum to Material Safety Data Sheet  
 REGULATORY STATUS

This Addendum Must Not Be Detached from the MSDS Identifies SARA 313 substance(s) Any copying or redistribution of the MSDS must include a copy of this addendum

Hazard Categories for SARA Section 311/312 Reporting

Acute	Chronic	Fire	Pressure	Reactive
X	X			

SARA EHS SARA Sec. 313 CERCLA RCRA  
 Chemicals Chemicals  
 Product or Components RQ Sec. 302 Name Chemical RQ lbs Sec.  
 of Product: TPD List Category RQ lbs 33

HYDROCHLORIC ACID, 37% 5000 500 Yes No 5000acid No  
 (7647-01-0)

SARA Section 302 EHS RQ: Reportable Quantity of Extremely Hazardous Substance, listed at 40 CFR 355.

SARA Section 302 EHS TPD: Threshold Planning Quantity of Extremely Hazardous substance. An asterisk (\*) following a Threshold Planning Quantity signifies that if the material is a solid and has a particle size equal to or larger than 100 micrometers, the Threshold Planning Quantity = 10,000 LBS.

SARA Section 313 Chemicals: Toxic Substances subject to annual release reporting requirements listed at 40 CFR 372.05.

CERCLA Sec. 103: Comprehensive Environmental Response, Compensation and Liability Act (Superfund) Releases to air, land or water of these hazardous substances which exceed the Reportable Quantity (RQ) must be reported to the National Response Center, (800-424-8802); Listed at 40 CFR 302.4

RCRA: Resource Conservation and Recovery Act. Commercial chemical product wastes designated as acute hazards or toxic under 40 CFR 261.33  
 HYDCH HYDROCHLORIC ACID, 37%

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