

HYDROCHLORIC ACID, 37%

Material Safety Data Sheet

Manufacturer: Mallinckrodt Chemical, Inc. Distributor: Fisher Scientific
P.O. Box 8000 Houston, TX 77038
Emergency Phone Number: 314-539-1600

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.

Wash 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 Cauticle Poison Act.

EMERGENCY FIRST AID

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water or milk if available. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In all cases call a physician.

SEE SECTION 5.

SECTION 1

Physical Data

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); Azeotrope Vapor Density (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

SECTION 2

Fire and Explosion

Information

Fire:

Explosion:

Fire Extinguishing Media:

Special Information:

Reactivity Data

Stability:

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

SECTION 3

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

SECTION 4

SECTION 5

turns.

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 fumes or vapors. Isolate or enclose the area of the leak or spill. Small Spills: Flush with water and neutralize with alkaline material (sodium bicarbonate, etc.). Saver neutralized material with pieces of 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 (RCQ/CWA/CERCLA) : 5000 lbs. Ensure compliance with local, state and federal regulations.

Health Hazard Information

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

Oral rat LD50: 900 mg/kg (hydrochloric acid concentrated)

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 working with this material. 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.

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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			X

Product or Components	SARA EHS Sec. 302 TPD	SARA EHS Sec. 313 Chemical Name	CERCLA RCRA Sec. 103 Chemical Name	RD lbs	Sec. 313 Category
HYDROCHLORIC ACID, 37% (7647-01-0)	5000	500	Yes	No	5000acid No

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 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
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