

MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name	HYDROCHLORIC ACID, 33-40%
Version #	05
Revision date	06-25-2010
CAS #	Mixture
Product Codes	J.T.Baker: 5367, 5537, 5575, 5800, 5814, 5821, 5839, 5861, 5862, 5894, 5962, 5963, 5972, 5994, 6900, 7831, 9165, 9529, 9530, 9534, 9535, 9536, 9538, 9539, 9540, 9544, 9548, 9551, 9625, IM2612 Mallinckrodt: 2062, 2515, 2612, 2624, 2626, 3861, 5583, 5587, H611, H613, H616, H987, H992, H999, V078, V628
Synonym(s)	Muriatic acid * hydrogen chloride, aqueous
Manufacturer	Mallinckrodt Baker, Inc.
Address	222 Red School Lane Phillipsburg, NJ 08865 US
Customer Service	800-582-2537
24 Hour Emergency	908-859-2151
Chemtec	800-424-9300

2. Hazards Identification

Emergency overview	DANGER -- POISON Corrosive. Causes skin and eye burns. May be fatal if swallowed or inhaled. Prolonged exposure may cause chronic effects.
OSHA regulatory status	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Inhalation. Ingestion. Skin contact. Eye contact.
Eyes	Risk of serious damage to eyes. Do not get this material in contact with eyes. Causes eye burns.
Skin	Causes skin burns. Do not get this material in contact with skin.
Inhalation	Causes burns. Prolonged inhalation may be harmful. May cause lung damage. Do not breathe dust/fume/gas/mist/vapors/spray.
Ingestion	Components of the product may be absorbed into the body by ingestion. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract. Ingestion of this product may cause nausea, vomiting and diarrhea. Do not ingest.
Target organs	Eyes. RESPIRATORY SYSTEM. Skin. Lungs.
Signs and symptoms	Contact with this material will cause burns to the skin, eyes and mucous membranes. Symptoms are prostration, gasping, pallor, and uncoordinated movements. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Symptoms may include redness, edema, drying, defatting and cracking of the skin. Irritation of nose and throat.
Potential environmental effects	Components of this product are hazardous to aquatic life. May cause long-term adverse effects in the environment.

3. Composition / Information on Ingredients

Hazardous components	CAS #	Percent
HYDROGEN CHLORIDE	7647-01-0	33 - 40
Non-hazardous components	CAS #	Percent
WATER	7732-18-5	60 - 67

4. First Aid Measures

First aid procedures

Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
Skin contact	Remove and isolate contaminated clothing and shoes. Immediately flush skin with plenty of water. Get medical attention immediately. For minor skin contact, avoid spreading material on unaffected skin. Wash clothing separately before reuse.
Inhalation	Move to fresh air. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention immediately.
Ingestion	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting without advice from poison control center. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Rinse mouth thoroughly. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Notes to physician	In case of shortness of breath, give oxygen. Keep victim warm.
General advice	Immediate medical attention is required. In case of shortness of breath, give oxygen. Keep victim warm. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Flammable properties	The product is not flammable. No unusual fire or explosion hazards noted.
Extinguishing media	
Suitable extinguishing media	Water.
Protection of firefighters	
Protective equipment and precautions for firefighters	In the event of fire, cool tanks with water spray. Use water spray to cool unopened containers. Cool containers exposed to flames with water until well after the fire is out.
Specific methods	In the event of fire, cool tanks with water spray. Use water spray to cool unopened containers.

6. Accidental Release Measures

Personal precautions	Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Keep out of low areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep upwind.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not contaminate water.
Methods for containment	Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewer, basements or confined areas.
Methods for cleaning up	Should not be released into the environment. Large Spills: Dike far ahead of spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Never return spills in original containers for re-use. Following product recovery, flush area with water. Clean surface thoroughly to remove residual contamination. J. T. Baker NEUTRASORB® acid neutralizers are recommended for spills of this product.

7. Handling and Storage

Handling

Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not get this material on clothing. Do not use in areas without adequate ventilation. Avoid prolonged exposure. Wash thoroughly after handling. Handle and open container with care. Use caution when combining with water; DO NOT add water to acid, ALWAYS add acid to water while stirring to prevent release of heat, steam and fumes.

Storage

Store in a well-ventilated place. Keep container tightly closed. Keep out of the reach of children. Use care in handling/storage. Keep away from food, drink and animal feedingstuffs.

8. Exposure Controls / Personal Protection

Occupational exposure limits

ACGIH

Components

Type

Value

HYDROGEN CHLORIDE (7647-01-0)

Ceiling

2.0000 ppm

U.S. - OSHA

Components

Type

Value

HYDROGEN CHLORIDE (7647-01-0)

Ceiling

5.0000 ppm
7.0000 mg/m3

Engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal protective equipment

Eye / face protection

Do not get in eyes. Chemical goggles are recommended. Wear safety glasses with side shields (or goggles). Face-shield. Provide eyewash station and safety shower.

Skin protection

Do not get this material in contact with skin. Do not get this material on clothing. Use chemical splash goggles and face shield (ANSI Z87.1 or approved equivalent). Wear appropriate chemical resistant clothing. Chemical resistant gloves. Structural firefighters protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations.

Respiratory protection

Do not breathe dust/fume/gas/mist/vapors/spray. Wear positive pressure self-contained breathing apparatus (SCBA).

General hygiene considerations

Do not get in eyes. Do not get this material in contact with skin. Do not get this material on clothing. When using, do not eat, drink or smoke. Keep away from food and drink. Handle in accordance with good industrial hygiene and safety practice.

General

Structural firefighters protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations.

9. Physical & Chemical Properties

Appearance

Clear.

Color

Colorless.

Odor

Pungent.

Odor threshold

Not available.

Physical state

Liquid.

Form

Liquid.

pH

0.1 - 2.02

Melting point

-101.2 °F (-74 °C)

Freezing point

Not available.

Boiling point

217.4 °F (103 °C) estimated

Flash point

Not available.

Evaporation rate	Not available.
Flammability	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	0 hPa estimated
Vapor density	Not available.
Specific gravity	1.05 estimated
Relative density	Not available.
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Percent volatile	63.5 % estimated
Molecular formula	HCl

10. Chemical Stability & Reactivity Information

Chemical stability	Stable at normal conditions.
Conditions to avoid	Reacts violently with strong alkaline substances. This product may react with reducing agents. Do not mix with other chemicals.
Incompatible materials	Incompatible with bases. Amines. Acids. This product may react with reducing agents. Contact with metals may evolve flammable hydrogen gas.
Hazardous decomposition products	Hydrogen chloride. Chlorine. May decompose upon heating to produce corrosive and/or toxic fumes.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Toxicological data	
Product	Test Results
HYDROCHLORIC ACID, 33-40% (Mixture)	Acute Dermal LD50 Mouse: 3970 mg/kg estimated Acute Inhalation LC50 Mouse: 3036 mg/l estimated Acute Inhalation LC50 Rat: 8559 mg/l estimated Acute Oral LD50 Rabbit: 2466 mg/kg estimated
Components	Test Results
HYDROGEN CHLORIDE (7647-01-0)	Acute Dermal LD50 Mouse: 1449 mg/kg Acute Inhalation LC50 Mouse: 1108 mg/l 1.00 Hours Acute Inhalation LC50 Rat: 3124 mg/l 1.00 Hours Acute Oral LD50 Rabbit: 900 mg/kg

* Estimates for product may be based on additional component data not shown.

Acute effects	Causes burns.
Local effects	Causes burns.
Chronic effects	Hazardous by OSHA criteria. Prolonged exposure may cause chronic effects.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

ACGIH Carcinogens

HYDROGEN CHLORIDE (CAS 7647-01-0)

A4 Not classifiable as a human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

HYDROGEN CHLORIDE (CAS 7647-01-0)

3 Not classifiable as to carcinogenicity to humans.

Skin corrosion/irritation Hazardous by OSHA criteria.**Epidemiology** Not available.**Neurological effects** Not available.**12. Ecological Information**

Ecotoxicological data**Product****Test Results**

HYDROCHLORIC ACID, 33-40% (Mixture)

LC50 Fish: 773 mg/l 96.00 Hours estimated

Components**Test Results**

HYDROGEN CHLORIDE (7647-01-0)

LC50 Western mosquitofish (Gambusia affinis): 282 mg/l 96.00 Hours

* Estimates for product may be based on additional component data not shown.

Ecotoxicity Components of this product are hazardous to aquatic life. Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.**Environmental effects** Harmful to aquatic organisms.**Persistence and degradability** Not available.**13. Disposal Considerations**

Waste codes D002: Waste Corrosive material [pH <=2 or >=12.5, or corrosive to steel]**Disposal instructions** Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Dispose in accordance with all applicable regulations.**14. Transport Information**

DOT**Basic shipping requirements:**

UN number	UN1789
Proper shipping name	HYDROCHLORIC ACID
Hazard class	8
Packing group	II
Additional information:	
ERG number	157

IATA**Basic shipping requirements:**

UN number	1789
Proper shipping name	HYDROCHLORIC ACID
Hazard class	8
Packing group	II

IMDG**Basic shipping requirements:**

UN number	1789
Proper shipping name	HYDROCHLORIC ACID
Hazard class	8
Packing group	II



DOT



IATA



IMDG

15. Regulatory Information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Spill: Reportable quantity

HYDROGEN CHLORIDE (CAS 7647-01-0) 5000 LBS

US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Substance: Threshold Planning Quantity

HYDROGEN CHLORIDE (CAS 7647-01-0) 500 LBS

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

HYDROGEN CHLORIDE (CAS 7647-01-0) 1.0 %

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

HYDROGEN CHLORIDE (CAS 7647-01-0) Listed.

CERCLA (Superfund) reportable quantity

HYDROGEN CHLORIDE: 5000.0000

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 311 hazardous chemical

Yes

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - New Jersey Community RTK (EHS Survey): Reportable threshold

HYDROGEN CHLORIDE (CAS 7647-01-0) 500 LBS

US - Pennsylvania RTK - Hazardous Substances: Listed substance

HYDROGEN CHLORIDE (CAS 7647-01-0) Listed.

Saf-T-Data Health: 3 - Severe (Poison)
Flammability: 0 - None
Reactivity: 2 - Moderate
Contact: 4 - Extreme (Corrosive)
Lab Protective Equip: D - GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES
Storage Color Code: W - White (Corrosive)

16. Labeling Info

Label Hazard Warning DANGER -- POISON
Corrosive. Causes skin and eye burns. May be fatal if swallowed or inhaled. Prolonged exposure may cause chronic effects.

Label Precautions Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Use only with adequate ventilation. Keep container closed. Wash thoroughly after handling.

Label First Aid Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately. Immediately flush skin with plenty of water. Get medical attention. If gas/fume/vapor/dust/mist from the material is inhaled, remove the affected person immediately to fresh air. Get medical attention immediately. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting without advice from poison control center. Do not use mouth-to-mouth method if victim ingested the substance.

17. Other Information

NFPA ratings Health: 3
Flammability: 0
Instability: 1

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This data sheet contains changes from the previous version in section(s): Fire Fighting Measures: Specific hazards arising from the chemical