



MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Hydrochloric acid 20 Be
HCI PRODUCT ID NUMBER: 01334
SYNONYMS: Muriatic acid
CHEMICAL FAMILY NAME: Acids, inorganic
NFPA HAZARD RATINGS(H-F-R) : 3-0-0
HMIS HAZARD RATINGS(H-F-R): 3-0-0
DISTRIBUTOR: HCI USA Distribution Companies
IN CASE OF EMERGENCY CALL: 1-800-424-9300

MSDS PREPARED BY: HCI Technical Resource Center
St. Louis, MO 63111
(314) 353-6500

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS	CAS NUMBERS	Percent
Hydrochloric acid	007647-01-0	31.5

Trace impurities and additional material names not listed above may also appear in the Regulatory Information Section (Section 15) towards the end of the MSDS. These materials may be listed for local "Right to Know" compliance and for other reasons.

3. HAZARDOUS IDENTIFICATION

EMERGENCY OVERVIEW: DANGER! Causes severe skin and eye burns. Harmful or fatal if swallowed. Harmful if inhaled.

POTENTIAL HEALTH EFFECTS:

SKIN CONTACT: Contact with the skin can cause severe irritation or burns.

SKIN ABSORPTION: No data available

EYES: Contact with the eyes may result in severe irritation and permanent injury may occur.

May cause burns to eyes.

INGESTION: Ingestion may cause severe irritation or burns of the mucous membranes of the mouth, throat, esophagus, and stomach.

Ingestion can cause severe abdominal distress and may be fatal.

INHALATION: Inhalation of dusts or mists can damage upper respiratory tract and lung tissue depending on the extent of exposure.

MEDICAL CONDITIONS AGGRAVATED:

No data available

This product does not contain any chemicals reportable under California Proposition 65.
Components found on one of the OSHA designated carcinogen lists are listed below.

INGREDIENT	NTP	IARC	OSHA
Hydrochloric acid	N	N	N

4. FIRST AID MEASURES

- SKIN CONTACT:** Remove contaminated clothing and shoes.
Call a physician for burns or irritation.
Call a physician if irritation persists.
- EYE CONTACT:** Flush eyes with water for at least 15 minutes.
Get immediate medical attention.
- INGESTION:** Call a physician immediately!
Do not induce vomiting. Give 1-2 glasses of water to dilute. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.
Do not give anything by mouth to an unconscious person.
- INHALATION:** Remove to fresh air.
If breathing has stopped, give artificial respiration.
Get medical attention.
- NOTES TO PHYSICIAN:** For inhalation, consider oxygen. Avoid gastric lavage or emesis.

5. FIRE FIGHTING MEASURES**FIRE AND EXPLOSIVE PROPERTIES**

- FLASH POINT:** Not applicable °F
- FLASH POINT:** Not applicable °C
- LOWER FLAMMABILITY LIMIT:** Not applicable
- UPPER FLAMMABILITY LIMIT:** Not applicable
- AUTOIGNITION TEMPERATURE:** Not applicable °F, Not applicable °C
- FLAMMABILITY CLASSIFICATION:** N/AP
- EXTING. MEDIA:** Use water spray, carbon dioxide, dry chemical, or foam.
- FIRE FIGHTING :** Water spray may be ineffective on fire but can be used to protect fire fighters and cool closed containers.
- PROTECTIVE EQUIPMENT:** Use NIOSH-approved self-contained breathing apparatus and complete protective clothing when fighting chemical fires.
- FIRE HAZARDS:** This product is not flammable but reacts with some metals to form

FIRE HAZARDS:

flammable hydrogen gas.
During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

6. ACCIDENTAL RELEASE MEASURES

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| SMALL SPILLS: | Contain spill and ventilate area.
Neutralize with sodium bicarbonate or equal parts of soda ash and slaked lime.
Absorb material with inert media, then scoop into disposal containers.
Wear protective clothing and respiratory protection during clean-up. |
| LARGE SPILLS: | Contain spill and ventilate area. Permit only trained personnel wearing full protective equipment to enter the spill area. Collect the spill in a waste container or remove with a vacuum truck. Prevent spill from entering natural watercourses. |

PROTECTIVE EQUIPMENT\ SPILL-RELEASE INSTRUCTIONS:

Wear complete protective clothing when cleaning up chemical spills. Spills and releases may have to be reported to federal and/or local authorities. See the Regulatory Information section (section 14) regarding reporting requirements.

7. HANDLING AND STORAGE

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| HANDLING: | Avoid contact with skin, eyes, and clothing.
Avoid breathing product vapors and mists.
Do not take internally.
Wash thoroughly after handling this material.
Use this material only with adequate ventilation. |
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| STORAGE : | Keep container closed when not in use.
This material should be stored at moderate temperatures.
Avoid contact with tin, aluminum, zinc, and their alloys.
Store in a cool, dry place.
The empty container is hazardous. |
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8. EXPOSURE CONTROLS/PERSONAL PROTECTION**ENGINEERING CONTROLS:**

Use a ventilation system to maintain atmospheric concentrations below published exposure limits. Corrosion-proof fans should be used in a mechanical-type ventilation system.

PERSONAL PROTECTIVE EQUIPMENT

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|---------------------|---|
| SKIN: | Wear protective gloves made of neoprene or rubber. |
| EYE : | Wear chemical safety goggles. |
| RESPIRATORY: | For exposure levels greater than 5 ppm but not more than 50 ppm use a NIOSH-approved respirator for hydrogen chloride mists in order to maintain levels below exposure limits. For gas concentration greater than 50 ppm, use a supplied air, full face-piece respirator or self-contained breathing apparatus. |
| OTHER: | Emergency showers, eye-wash stations, and fire blankets should be accessible.
Wear protective clothing. |

EXPOSURE GUIDELINES :

INGREDIENT	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL
Hydrochloric acid	5(c) PPM	N/EST	5(c) PPM	N/EST

c = ceiling

N/EST = Not established

See 29 CFR 1910.1000 (D) (2) and ACGIH "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices" booklet (Appendix C) for the determination of exposure limits for mixtures. Consult an industrial hygenist or similar professional to confirm that the calculated exposure limits are appropriate.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
APPEARANCE	Colorless to yellow
ODOR:	Acrid, pungent
SPECIFIC GRAVITY:	1.085
SOLUBILTY (IN WATER):	Soluble
BOILING POINT (°F):	221
BOILING POINT (°C):	104.99
FREEZING POINT (°F):	-40
FREEZING POINT (°C):	-40
MELTING POINT (°F):	-40
MELTING POINT (°C):	-40
PRODUCT pH :	<1
VAPOR PRESSURE:	0.1 mmHg @ 20C
VAPOR DENSITY:	1.3
EVAPORATION RATE:	>1
% VOLATILES:	Not available

10. STABILITY AND REACTIVITY

STABILITY:	Stable
CONDITIONS TO AVOID:	Keep away from heat, sparks, and open flames. May ignite or explode on contact with combustible materials.
INCOMPATIBILITY:	This material should avoid contact with most metals, alkalies, metallic

INCOMPATIBILITY:

oxides, amines, carbonates, sulfides, and strong oxidizers. Metals: Reacts to release hydrogen gas. Oxidizers: Reacts to release chlorine gas. Cyanides: Reacts to release cyanide gas. Sulfides: Reacts to release hydrogen sulfide gas. Formaldehyde: Reacts to release Bischloromethyl ether. Amines: Reacts to form ammonia. Carbonates: Reacts to form carbon dioxide.

DECOMPOSITION:

Hydrogen chloride
Hydrogen sulfide
Phosgene

POLYMERIZATION WILL OCCUR:

no

11. TOXICOLOGICAL INFORMATION**IMMEDIATE EFFECTS:**

May cause burns to skin and eyes. Harmful if inhaled. Harmful or fatal if swallowed. HYDROCHLORIC ACID 100%: Moderately toxic: inhalation, ingestion. This material is corrosive by inhalation, skin and eye contact, and ingestion. IRRITATION DATA: 5 mg/30 seconds(s) rinsed eyes - rabbit- mild irritation; TOXICITY DATA: 3124 ppm/1 hour (s) inhalation - rat - LD50; 1108 ppm/1 hour(s) inhalation - mouse - LD50; 40142 ug/kg intraperitoneal - mouse - LD50; 900 mg/kg oral - rabbit - LD50

CARCINOGENICITY:

HYDROCHLORIC ACID 100%: CARCINOGEN STATUS: IARC: Human Inadequate Evidence, Animal Inadequate Evidence, Group 3.

HYDROCHLORIC ACID 100%: MUTAGENIC DATA: DNA repair - Escherichia coli 25 ug/well; sex chromosome loss and non disjunction - Drosophila melanogaster inhalation 100 ppm 24 hour(s); sex chromosome loss and non disjunction - drosophila melanogaster oral 100 ppm; cytogenetic analysis - grasshopper parenteral 20 mg; cytogenetic analysis - hamster lung 300 mmol/L; cytogenetic analysis - hamster ovary 8 mmol/L

EPIDEMIOLOGY:

No data available

TERATOGENICITY:

No data available

REPRODUCTIVITY:

HYDROCHLORIC ACID 100%: 450 mg/m³ inhalation - rat TCLo/1 hours 1 day(s) pre-pregnancy continuous

NEURTOXICITY:

No data available

12. ECOLOGICAL INFORMATION

HYDROCHLORIC ACID 100%: ECOTOXICITY DATA: FISH TOXICITY: 21900 ug/L 96 hour LC50 (mortality) Fathead Minnow; INVERTEBRATE TOXICITY: 560 ug/L 48 hour EC50 (immobilization) Water flea; ALGAL TOXICITY: 800 ug/L 1600 week EC50 (population size reduction) Green algae; PHYTOTOXICITY: 1000 ug/L 4-48 week (residue) Water-hyacinth; FATE AND TRANSPORT: BIOCONCENTRATION: 1000 M 24 week BCF (residue) Blue-green algae (Coccochloris sp) 1E-6.5 M

13. DISPOSAL CONSIDERATIONS

RCRA WASTE: Yes
RCRA ID NUMBER: D002
VOC CONTENT (lbs/gal): Not applicable
Waste Disposal Procedure: Discharge, treatment, or disposal may be subject to Federal, State, or Local laws. State and Local regulations and restrictions are complex and may differ from Federal disposal regulation. The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA Classification and the proper disposal method.

14. TRANSPORTATION INFORMATION

D.O.T. SHIPPING NAME: Hydrochloric acid
D.O.T. HAZARD CLASS: Class 8, No division Corrosive materials
DOT ID NUMBER: UN 1789
DOT PACKING GROUP: II
DOT RQ (lbs): 15873
CONTRIBUTING CHEMICAL: (Hydrochloric acid)
OTHER: Labels required: Corrosive
IMDG HAZARD CLASS: 8 - Corrosive materials
ICAO HAZARD CLASS: 8 - Corrosive

15. REGULATORY INFORMATION

TSCA (Toxic Substance Control Act): yes
SECTION 311/312 HAZARD CLASS: Immediate (acute) health hazard
WHMIS CLASSIFICATION (CANADA): Class E
FOREIGN INVENTORY: EINECS (European Inventory of Existing Commercial Chemical Substances)
Canadian DSL (Domestic Substances List)

ADDITIONAL REGULATORY INFORMATION

This product does not contain any chemicals reportable under California Proposition 65.

MASSACHUSETTS SUBSTANCE LIST:

Hydrochloric acid

NEW JERSEY SUBSTANCE LIST:

Hydrochloric acid

PENNSYLVANIA HAZARDOUS SUBSTANCE LIST:

Hydrochloric acid

SARA TITLE III (Superfund Amendments and Reauthorization Act):

INGREDIENTS	CAS NUMBERS	Section 313	Section 302
Hydrochloric acid	007647-01-0	Y	Y

16. OTHER INFORMATION

CREATION DATE: 03/06/1997

REVISION DATE: 11/05/1999

DISCLAIMER:

The information herein is presented in good faith and is believed to be correct as of the date hereof. However, HCI makes no representation as to the completeness and accuracy thereof. Users must make their own determination as to the suitability of the product for their purposes prior to use. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature with respect to the product or to the information herein is made hereunder. HCI shall in no event be responsible for any damages of whatsoever nature directly or indirectly resulting from the publication, or use of, or reliance upon the information contained herein.