



# MSDS

## MATERIAL SAFETY DATA SHEET

24 Hour Emergency Telephone Number CHEMTREC 1-800-424-9300

SUNBELT CHEMICALS 71 HARGROVE GRADE PALM COAST, FLORIDA 32137

All non-emergency questions should be directed to Customer Service (1-386-446-4595) for assistance.

## HYDROCHLORIC ACID, 31.45% (20° Baume)

### 1. Product Identification

**Synonyms:** muriatic acid, swimming pool acid, a solution of hydrogen chloride in water.

**CAS Number:** 7647-01-0

**Product Name:** SMART Muriatic Acid

**Part Number:** 118 and 2118

**UPC Code:** 017926001189

**Supplier GLN:** 00179264004142

**GTIN:** 00179260011894

### 2. Composition/Information on Ingredients

<u>Ingredient</u>	<u>CAS Number</u>	<u>Percent</u>	<u>Hazardous</u>
hydrogen chloride	7647-01-0	31.45%	yes
water	7732-18-5	68.55%	no

### 3. Hazards Information

#### Emergency Overview

☠ **POISON** ☠ **DANGER, CORROSIVE, MAY BE FATAL IF SWALLOWED OR INHALED.**  
LIQUID AND MIST CAN CAUSE SEVERE BURNS TO ALL BODY TISSUE.

#### Potential Health Effects

**Inhalation:** Corrosive! Inhalation of vapors can cause severe coughing, choking, inflammation of the nose, throat and upper respiratory tract. Severe cases can cause pulmonary edema, circulatory failure and death.

**Ingestion:** Corrosive! Swallowing hydrochloric acid can cause immediate pain and burns to the nose, mouth, throat, esophagus and gastrointestinal tract. May cause nausea, vomiting, diarrhea and in severe cases, death.

**Skin Contact:** Corrosive! Can cause redness, pain and severe burns. May cause deep ulceration and discoloration of the skin.

**Eye Contact:** Corrosive! Vapors are irritating and may cause damage to the eyes. Liquid contact can cause severe burns, permanent eye damage and blindness.

**Chronic Exposure:** Long term exposure to concentrated vapors may cause erosion of the teeth. Long term exposure seldom occurs due to the corrosive properties of hydrochloric acid.

**Aggravation of Pre-existing Conditions:** Persons with pre-existing conditions, such as skin disorders, or eye disease may be more susceptible to the adverse effects of hydrochloric acid.

#### 4. First Aid Measures

**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek immediate medical attention.

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

**Skin Contact:** In case of contact with liquid, immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Seek immediate medical attention.

**Eye Contact:** Immediately flush eyes with plenty of flowing water for at least 15 minutes, while lifting upper and lower eyelids. Seek immediate medical attention.

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#### 5. Fire Fighting Measures

**NFPA ratings:** Health **3** Flammability **0** Reactivity **1**

**Fire:** Not considered to be a fire hazard. May react with metals to form flammable hydrogen gas.

**Explosion:** Not considered to be an explosion hazard.

**Fire Extinguishing Media:** Water or water spray. Neutralize with soda ash or slaked lime.

**Special Information:** In the event of fire, wear full protective clothing and NIOSH approved self-contained breathing apparatus (SCBA), with full face shield, operated in positive pressure mode. Structural firefighting protective clothing is ineffective for fires involving hydrochloric acid. Stay away from ends of tanks. Cool tanks and drums with water spray until well after fire is out.

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#### 6. Accidental Release Measures

Adequately ventilate area of leak or spill. Wear appropriate personal protective equipment (PPE), as specified in Section 8. Isolate hazard area to keep unprotected personnel from entering. Stop the leak if possible. Contain and recover liquid when possible. Neutralize spilled liquid with alkaline materials (soda ash, lime). Then absorb the neutralized liquid with an inert material, such as vermiculite, sand, or earth and place recovered material in an approved, compatible chemical waste container. Do not use combustible materials such as cardboard or saw dust as an absorbent. Do not flush spilled acid to the sewer. EPA regulations require reporting spills and releases to the soil, air and water, in excess of the reportable quantity (5,000 lbs), to the National Response Center, telephone number 1-800-424-8802. Reporting to the State Emergency Response Commission (SERC) warning point and local authorities (911) is also required.

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#### 7. Handling and Storage

Store in a cool, dry, ventilated storage area with acid resistant floors and good drainage. Protect from physical damage. Keep out of sunlight and direct heat, water and incompatible materials. Do not wash out container and use it for other purposes. When diluting, the acid should always be added slowly to the water. Never use hot water and never add water to acid. Water added to acid can cause uncontrolled boiling and splashing. Empty acid containers may be hazardous since they retain acid residues of liquid and vapor. Observe all warnings and precautions stated on the acid container label. Wear personal protective equipment when handling, opening containers and using hydrochloric acid.

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## 8. Exposure Control and Personal Protection

### Airborne Exposure Limits:

OSHA Permissible Exposure Limit (PEL)	5 ppm (Ceiling)	(7 mg/m <sup>3</sup> )
NIOSH Relative Exposure Level (REL)	5 ppm (Ceiling)	(7 mg/m <sup>3</sup> )
ACGIH Threshold Limit Value (TLV)	2 ppm (Ceiling)	(TWA)
NIOSH Immediately Dangerous Level (IDLH)	50 ppm	

**Ventilation:** A system of local and/or general exhaust is recommended to keep exposure below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the acid at the source, preventing dispersion into the occupied area.

**Personal Respirators (NIOSH Approved):** If exposure limits are exceeded and engineering controls are not feasible, a full face respirator with an acid gas cartridge may be worn up to 50 times the permissible exposure limit (PEL). For emergencies or instances where the exposure levels are not known, use full face, positive pressure, air supplied respirator. **WARNING!** Air purifying respirators do not provide protection in oxygen deficient atmospheres.

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

**Eye Protection:** Use safety glasses with side shields, chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick drench facilities (safety shower) in work areas.

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## 9. Physical and Chemical Properties

**Appearance:** Clear, colorless liquid.

**Odor:** Pungent, acrid odor.

**Solubility:** Infinitely soluble in water.

**Specific Gravity:** 1.155 – 1.162

**Percent Volatile:** 100%

**Boiling Point:** 180 °F – 220 °F

**Vapor Density:** 1.27 (Air =1)

**Vapor Pressure:** 35 mm Hg @ 86 °F

**Evaporation Rate:** < 1 (butyl acetate = 1)

**pH:** < 1

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## 10. Stability and Reactivity

**Stability:** Stable under ordinary conditions of use and storage. Avoid heat and direct sunlight.

**Hazardous Decomposition Products:** When heated to decomposition, emits toxic hydrogen chloride fumes and will react with water or steam to produce heat and toxic, corrosive fumes. Thermal decomposition in the presence of oxidizing materials produces toxic chlorine fumes and explosive hydrogen gas.

**Hazardous Polymerization:** Will not occur.

**Incompatibilities:** Highly reactive with strong bases, metals, metal oxides, hydroxides, amines, carbonates and alkaline materials. Incompatible with cyanide, sulfides, sulfites and formaldehyde.

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## 11. Toxicological Information

Lethal inhaled concentration (LC50) in rats: 3,124 ppm/1 hr

Not listed on the OSHA, NTP or IARC list of carcinogens.

## 12. Ecological Information

**Environmental Fate:** Rapidly hydrolyzes when exposed to water. Exhibits extensive evaporation from soil surfaces. Transport through soil may contaminate ground water and will dissolve some of the soil materials (especially those with carbonate bases). Acid will be neutralized to a large degree by contact with carbonates in soil.

**Environmental Toxicity:** Lethal to fish from 25 mg/l and up. Toxic to aquatic organisms as a result of pH shift.

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## 13. Disposal Considerations

Whatever cannot be recovered or recycled should be handled as Characteristic Hazardous Waste (pH <2.0) and sent to a RCRA approved waste facility. State and local disposal regulations may differ from federal regulations. Dispose of container and contents in accordance with federal, state and local laws.

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## 14. Transport Information

**Proper Shipping Name:** HYDROCHLORIC ACID

**Full Shipping Description:** HYDROCHLORIC ACID, 8, UN1789, PGII

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## 15. Regulatory Information

**Regulated Ingredient:** hydrogen chloride (CAS # 7647-01-0)

**TSCA Inventory Listed:** Yes

**CERCLA RQ:** 5,000 lbs

**SARA Title III, Section 302:** Extremely Hazardous Substance (EHS) **TPQ:** 500 lbs

**SARA Title III, Section 312:** Subject to Toxic Chemical Inventory Reporting

**Acute:** Yes **Chronic:** Yes **Fire:** No **Pressure:** No **Reactivity:** No

**SARA Title III, Section 313:** Subject to Toxic Chemical Release Inventory Reporting (as mist)

**RCRA Hazardous Waste:** Characteristic Corrosive (Liquid with pH < 2.0)

**Clean Air Act:** Listed Hazardous Air Pollutant (HAP)

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## 16. Other Information

**Label Hazard Warning:**

 **POISON**  **DANGER, CORROSIVE, MAY BE FATAL IF SWALLOWED OR INHALED. LIQUID AND MIST CAN CAUSE SEVERE BURNS TO ALL BODY TISSUE.**

**Label Precautions:** Do not get in eyes, on skin, or on clothing. Avoid breathing vapor or mist. Keep container closed when not in use. Use with adequate ventilation. Wash thoroughly after handling. KEEP OUT OF REACH OF CHILDREN.

**Label First Aid:** If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. 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 case of contact, immediately flush eyes or skin with plenty of water, for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. SEEK MEDICAL ATTENTION.

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