



**PhytoTechnology  
Laboratories®**

# SAFETY DATA SHEET

## 1. CHEMICAL IDENTIFICATION AND COMPANY INFORMATION

PRODUCT NAME: Hydrogen Chloride Solution 1.0 N  
 PRODUCT NUMBER: H245  
 COMPANY INFO: *PhytoTechnology Laboratories®*  
 PO Box 12205, Shawnee, KS 66282-2205  
 Phone: 1-888-749-8682 or 1-913-341-5343; Fax: 1-888-449-8682 or 1-913-341-5442  
 www.phytotechlab.com

EMERGENCY PHONE NUMBER: 1-800-535-5053 - US Only  
 1-352-323-3500 - International

RECOMMENDED USE: For Research Use Only

RESTRICTIONS ON USE: Products sold by *PhytoTechnology Laboratories®* are intended for research and laboratory use only. Products are not to be used as human or animal therapeutics, cosmetics, agricultural or pesticidal products, food additives, or as household chemicals.

## 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification:

- H226 – Flammable liquids (Category 3)
- H290 – Corrosive to metals (Category 1)
- H314 – Skin corrosion (Category 1)
- H318 – Serious eye damage (Category 1)

GHS Label elements, including hazard and precautionary statements:



Signal Word: **Danger**

Hazard Statements:

- H226 - Flammable liquid and vapor.
- H290 - May be corrosive to metals.
- H314 - Causes severe skin burns and eye damage.

Precautionary Statements:

- P210 – Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
- P280 – Wear protective gloves/protective clothing/eye protection/face protection.
- P303 + P361 + P353 – IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Hydrochloric Acid  
 CAS No: 7647-01-0  
 Formula: HCl  
 Molecular Weight: 36.46

Ingredient	CAS Number	Percent	Hazardous
Hydrochloric Acid	7647-01-0	<10 %	OSHA PEL: 5 ppm; ACGIH TLV: 5 ppm
Water	7732-18-5	>90 %	No exposure limits established by OSHA or ACGIH

#### 4. FIRST AID MEASURES

General Advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Route of Entry	Symptoms	First Aid Procedures
Ingestion	May cause irritation if swallowed	If swallowed, wash out mouth with water. Never give anything by mouth to an unconscious person. <b>Get medical attention.</b>
Inhalation	May cause irritation to respiratory tract	Safely remove victim to fresh air. If not breathing, institute cardiopulmonary resuscitation (CPR). If breathing is difficult, ensure clear airway and give oxygen. <b>Get medical attention.</b>
Eye Contact	Direct contact may cause irritation. May cause redness, tearing, or blurred vision.	Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. <b>Get medical attention if irritation persists.</b>
Skin Contact	Irritating. May cause reddening, itching or inflammation.	Wash area thoroughly with soap and water. Remove and wash contaminated clothing. <b>Get medical attention if irritation persists.</b>

Most Important Symptoms or Effects, Both Acute and Delayed:

See section 2 and/or section 11

Recommendation for Immediate Medical Care and Special Treatment Needed:

No data available

#### 5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Water spray, carbon dioxide, dry chemical powder, or appropriate foam. Use extinguishing media suitable for surrounding fire.

Special Protective Equipment and Precaution for Firefighters: In the event of a fire, wear full protective clothing and NIOSH approved self-contained breathing apparatus. Evacuate the area and fight fire from a safe distance.

Hazardous Combustion Products: May emit toxic fumes under fire conditions.

Toxic Gases Produced: Oxidizing agents, Soluble carbonates and phosphates, Hydroxides, Metals, Peroxides, permanganates, e.g. potassium permanganate, Amines, Alcohols, Bases, Alkali metals, Fluorine, hexalithium disilicide

#### 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:

Use personal protection recommended in Section 8. Avoid breathing dust, vapors, mist or gas. Ensure adequate ventilation, especially in confined areas. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental Precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Method of Containment and Cleanup: Clean-up personnel should wear proper protective equipment and clothing. Contain spilled material and do not let product enter drains. Soak up with inert absorbent material and place in a suitable, closed container for disposal in accordance with all local, state/provincial, and national requirements. Ventilate the area if necessary. Do not let products enter drains.

#### 7. HANDLING AND STORAGE

Precaution for Safe Handling: Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Avoid aerosols. Avoid incompatible substances. Keep away from sources of ignition. No smoking. Wash thoroughly after use.

Conditions for Safe Storage: Keep in a tightly closed container and store in a cool, dry, and well-ventilated area. Hygroscopic.

Incompatibilities: Potassium permanganate, aqueous sodium mixtures, aluminum, metals, plastics, strong mineral acids, metal oxides, amines, sodium bicarbonate, cyanides, sulfides, sulfites, formaldehyde, acetates, perchloric acid, phosphides

Recommended Storage Temperature: Room Temperature

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OSHA's Occupational Exposure Limits: 7 mg/m<sup>3</sup>, 5 ppm

ACGIH Threshold Limit Values (TLVs): 2 ppm

Engineering Controls: Handle in accordance to general industrial hygiene and safety practice.

Personal Protective Equipment (PPE):

Eye/Face Protection: Chemical safety glasses or goggles. Have eye-washing facilities readily available where eye contact can occur.

Skin Protection: Protective gloves

Body Protection: Lab coat

Respiratory Protection: Appropriate respirator

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Colorless Liquid

pH (1% v/v): 1.5 – 2.5

Solubility: Miscible with Water

Melting Range: -17 °C

Vapor Density: No data available

Vapor Pressure: No data available

Specific Gravity: 1.092 g/mL at 25 °C (77 °F)

Odor: Pungent odor

Odor Threshold: No data available

Viscosity: No data available

Relative Density: No data available

Evaporation Rate: No data available

Initial Boiling Point and Boiling Range: No data available

Flammability (solid, gas): No data available

Partition coefficient: No data available  
n-octanol/water):

Auto-ignition Temperature: No data available

Decomposition Temperature: No data available

Flash Point: 40 °C (104 °F)

Flammable Limits: Upper (%) – No data available      Lower (%) – No data available

## 10. STABILITY AND REACTIVITY

Reactivity: No data available

Chemical Stability: Stable under normal conditions of use

Possibility of Hazard Reactions: Will not occur

Conditions to Avoid: Heat, direct sunlight, moisture, mechanical shock

Incompatibles Materials: Oxidizing agents, Soluble carbonates and phosphates, Hydroxides, Metals, Peroxides, permanganates, e.g. potassium permanganate, Amines, Alcohols, Bases, Alkali metals, Fluorine, hexalithium disilicide

Hazardous Decomposition Products: Hydrogen chloride gas, chloride gas, hydrogen gas

## 11. TOXICOLOGICAL INFORMATION

Toxicity: LD<sub>50</sub> (Oral-Rat)(mg/Kg) No data available

LD<sub>50</sub> (Oral-Rat)(mg/Kg): No data available

LD<sub>50</sub> (IP-Mouse)(µg/Kg) No data available

Carcinogenicity: NTP: No

IARC: Yes (Group 3)

Z List: No

OSHA Reg: No

Reproductive Toxicity: No data available

Symptoms Associated with Overexposure: Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting, ingestion or inhalation of concentrated acetic acid causes damage to tissues of the respiratory and digestive tracts. Symptoms include: hematemesis, bloody diarrhea, edema and/or perforation of the esophagus and pylorus, pancreatitis, hematuria, anuria, uremia, albuminuria, hemolysis, convulsions, bronchitis, pulmonary edema, pneumonia, cardiovascular collapse, shock, and death. Direct contact or exposure to high concentrations of vapor with skin or eyes can cause: erythema, blisters, tissue destruction with slow healing, skin blackening, hyperkeratosis, fissures, corneal erosion, opacification, iritis, conjunctivitis, and possible blindness.

Specific Target Organ Toxicity: Single Exposure: No data available

Repeated Exposure: No data available

Target Organs: Stomach - irregularities

Medical Conditions Aggravated By Exposure: Pre-existing skin disorders

Routes of Entry: Inhalation, ingestion, skin contact, and eye contact

NIOSH/RTECS NO: Not listed

***The toxicological properties of this product have not been thoroughly investigated***

## 12. ECOLOGICAL INFORMATION

Ecotoxicity: No data available

Persistence and Degradability: No data available

Bioaccumulative Potential: No data available

Mobility in Soil: No data available

Other Adverse Effects: No data available

## 13. DISPOSAL CONSIDERATION

Disposal Procedure: Dispose in accordance with all applicable federal, state, and local environmental regulations.

EPA Hazardous Waste Number: No data available

#### 14. TRANSPORT INFORMATION

Domestic (D.O.T.): Proper Shipping Name: Corrosive liquids, flammable, n.o.s. (Hydrochloric acid, Acetic acid)  
 Hazard Class: 8 Packaging Group: III  
 UN: 1789  
 Marine Pollutant: No Poison inhalation hazard: No

#### International:

IMDG: Proper Shipping Name: Corrosive liquids, flammable, n.o.s. (Hydrochloric acid, Acetic acid)  
 Hazard Class: 8 Packaging Group: III EMS-No.: F-E, S-C  
 UN: 1789  
 Marine Pollutant: No

IATA: Proper Shipping Name: Corrosive liquids, flammable, n.o.s. (Hydrochloric acid, Acetic acid)  
 Hazard Class: 8 Packaging Group: III  
 UN: 1789

#### 15. REGULATORY INFORMATION

TSCA: Yes

#### SARA TITLE III:

Section 302 (EHS) Ingredients: Yes  
 Section 313 Ingredients: Yes  
 Section 304 (EHS/CERCLA) Ingredients: Yes

Section 311/312 Hazard: Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right to Know Components: CAS No.: 7647-01-0 Hydrochloric acid

Pennsylvania Right to Know Components: CAS No.: 7647-01-0 Hydrochloric acid  
 7732-18-5 Water

New Jersey Right to Know Components: CAS No.: 7647-01-0 Hydrochloric acid  
 7732-18-5 Water

California Prop. 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

#### 16. OTHER INFORMATION

HMIS Rating:	<b>Health Hazard</b>	<b>Chronic Health Hazard</b>	<b>Flammability</b>	<b>Physical Hazard</b>
	3	*	0	0
NFPA Rating:	<b>Health Hazard</b>	<b>Fire Hazard</b>	<b>Reactivity Hazard</b>	<b>Special Hazard</b>
	3	0	0	

\*Chronic Hazard: Chronic (long-term) health effects may result from repeated overexposure.

**PhytoTechnology Laboratories® provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. The above information is intended to be used only as a guide to the appropriate precautionary handling of this material by a properly trained person. PhytoTechnology Laboratories® shall not be held liable for any damage resulting from handling or from contact with the above product. This product is intended for LABORATORY USE ONLY. Our products may NOT BE USED as drugs, cosmetics, agricultural or pesticidal products, food additives or as household chemicals.**

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