



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product Name Hydrochloric Acid
CAS # Mixture
Product use pH adjustment for water treatment, metal processing, sugar refining
Manufacturer SODROX Chemicals Ltd.
7040 Wellington Road 124, R.R. #6
Guelph, ON N1H 6J3 CA
Business Phone: 519-837-2330
Fax: 519-837-3300
Emergency Phone: 1-800-363-6824

2. Hazards Identification

Emergency overview DANGER
CORROSIVE
VERY TOXIC.
CAUSES EYE BURNS. CAUSES SKIN BURNS.
MAY BE FATAL IF SWALLOWED OR INHALED.

Potential short term health effects

Routes of exposure Eye, Skin contact, Inhalation, Ingestion.

Eyes Causes chemical burns. May cause blindness.

Skin Causes chemical burns.

Inhalation Harmful if inhaled. May cause respiratory tract irritation or chemical burns. Inhalation of mists or vapors may produce upper airway edema, wheezing, pulmonary edema, pneumonitis and respiratory failure.

Ingestion Harmful if swallowed. May cause chemical burns to mouth, throat and stomach.

Target organs Eyes. Respiratory system. Skin.

Chronic effects Prolonged or repeated exposure to dilutions can cause drying, defatting and dermatitis.

Signs and symptoms The product causes burns of eyes, skin and mucous membranes. Symptoms may include redness, edema, drying, defatting and cracking of the skin. Symptoms are prostration, gasping, pallor, and uncoordinated movements. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

OSHA Regulatory Status This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential environmental effects See section 12.

3. Composition / Information on Ingredients

Ingredient(s)	CAS #	Percent
Hydrogen chloride	7647-01-0	30 - 60

4. First Aid Measures

First aid procedures

Eye contact Immediately flush with cool water. Remove contact lenses, if applicable, and continue flushing for 20 minutes. Obtain medical attention immediately.

Skin contact Immediately flush with cool water for 20 minutes while removing contaminated clothing and shoes. Discard or wash well before reuse. Obtain medical attention if irritation persists.

Inhalation If symptoms develop, move victim to fresh air. If symptoms persist, obtain medical attention. If breathing has stopped, trained personnel should administer CPR immediately.

Ingestion Obtain medical attention immediately. Do not induce vomiting. Never give anything by mouth if victim is unconscious, or is convulsing.

Notes to physician Symptoms may be delayed.

General advice

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Avoid contact with eyes and skin. Wear impervious gloves and chemical splash goggles. Keep out of reach of children.

5. Fire Fighting Measures

Flammable properties	Not flammable by WHMIS/OSHA criteria. Not flammable, but reacts with most metals to form flammable hydrogen gas.
Extinguishing media	
Suitable extinguishing media	Treat for surrounding material.
Unsuitable extinguishing media	Not available
Protection of firefighters	
Specific hazards arising from the chemical	Not available
Protective equipment for firefighters	Firefighters should wear full protective clothing including self contained breathing apparatus.
Hazardous combustion products	Irritating, corrosive and/or toxic gases or fumes will be released during a fire.
Explosion data	
Sensitivity to mechanical impact	Not available
Sensitivity to static discharge	Not available

6. Accidental Release Measures

Personal precautions	Wear appropriate protective equipment and clothing during clean-up. Keep unnecessary personnel away. Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak.
Environmental precautions	Prevent entry into waterways, sewers, basements or confined areas.
Methods for containment	Stop leak if you can do so without risk.
Methods for cleaning up	Should not be released into the environment. Before attempting clean up, refer to hazard data given above. Small spills may be absorbed with non-reactive absorbent and placed in suitable, covered, labelled containers. Prevent large spills from entering sewers or waterways. Contact emergency services and supplier for advice. Never return spills to original containers for re-use. Large Spills: Wet down with water and dike for later disposal. After removal flush contaminated area thoroughly with water.

7. Handling and Storage

Handling	<p>DANGER -- CORROSIVE</p> <p>Use good industrial hygiene practices in handling this material. Do not get this material in your eyes, on your skin, or on your clothing. DO NOT breathe vapor or fumes. Use only with adequate ventilation. Keep container tightly closed. 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. Wash thoroughly after handling.</p>
Storage	Keep out of the reach of children. Keep away from heat, open flames or other sources of ignition. Store in a tightly closed container in a cool, dry, well ventilated and dark place away from incompatible materials.

8. Exposure Controls / Personal Protection

Exposure limits	
Ingredient(s)	Exposure Limits
Hydrogen chloride	<p>ACGIH-TLV Ceiling: 2 ppm</p> <p>OSHA-PEL Ceiling: 5 ppm</p>

Engineering controls	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
Personal protective equipment	
Eye / face protection	Wear chemical goggles and face shield.
Hand protection	Impervious gloves. Confirm with reputable supplier first.
Skin and body protection	Use of an impervious apron is recommended.
Respiratory protection	If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink. Wash hands before breaks and immediately after handling the product.

9. Physical and Chemical Properties

Appearance	Clear
Color	Colourless to pale yellow
Form	Liquid
Odor	Pungent
Odor threshold	Not available
Physical state	Liquid
pH	< 1
Melting point	Not available
Freezing point	-23.80 °F (-31 °C) (35.21% solution)
Boiling point	143.60 °F (62 °C) (35.21% solution)
Pour point	Not available
Evaporation rate	Not available
Flash point	Not applicable
Auto-ignition temperature	Not applicable
Flammability limits in air, lower, % by volume	Not applicable
Flammability limits in air, upper, % by volume	Not applicable
Vapor pressure	72 MmHg @ 20°C (68°F) (35.21% solution)
Vapor density	Not available
Specific gravity	1.18 (35.21% solution)
Octanol/water coefficient	Not available
Solubility (H2O)	Miscible in all proportions
VOC (Weight %)	0
Viscosity	1.9 Cp @ 20°C (68°F)
Percent volatile	100
Molecular weight	36.46 g/mol
Molecular formula	H-Cl

10. Stability and Reactivity

Reactivity	Reacts violently with alkaline material. This product may react with reducing agents.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Chemical stability	Stable under recommended storage conditions.
Conditions to avoid	Heat, flames and sparks. Do not mix with other chemicals.
Incompatible materials	Caustics. Oxidizers. Reducing agents. Soft metals.
Hazardous decomposition products	Irritating, corrosive and/or toxic gases or fumes may be emitted upon the products decomposition.

11. Toxicological Information

Component analysis - LC50

Ingredient(s)	LC50
Hydrogen chloride	935 ppm mouse; 3124 mg/l/4h rat

Component analysis - Oral LD50

Ingredient(s)	LD50
Hydrogen chloride	900 mg/kg rabbit; 700 mg/kg rat

Effects of acute exposure

Eye	Causes chemical burns. May cause blindness.
Skin	Causes chemical burns.
Inhalation	Harmful if inhaled. May cause respiratory tract irritation or chemical burns. Inhalation of mists or vapors may produce upper airway edema, wheezing, pulmonary edema, pneumonitis and respiratory failure.
Ingestion	Harmful if swallowed. May cause chemical burns to mouth, throat and stomach.
Sensitization	Non-hazardous by WHMIS/OSHA criteria.
Chronic effects	Non-hazardous by WHMIS/OSHA criteria.
Carcinogenicity	Non-hazardous by WHMIS/OSHA criteria.
ACGIH - Threshold Limit Values - Carcinogens	
Hydrogen chloride	7647-01-0 A4 - Not Classifiable as a Human Carcinogen
IARC - Group 3 (Not Classifiable)	
Hydrogen chloride	7647-01-0 Monograph 54 [1992]
Mutagenicity	Non-hazardous by WHMIS/OSHA criteria.
Reproductive effects	Non-hazardous by WHMIS/OSHA criteria.
Teratogenicity	Non-hazardous by WHMIS/OSHA criteria.
Name of Toxicologically Synergistic Products	Not available

12. Ecological Information

Ecotoxicity	Components of this product have been identified as having potential environmental concerns.
Ecotoxicity - Freshwater Fish - Acute Toxicity Data	
Hydrogen chloride	7647-01-0 96 Hr LC50 Gambusia affinis: 282 mg/L [static]
Persistence / degradability	Not available
Bioaccumulation / accumulation	Not available
Mobility in environmental media	Not available
Environmental effects	Harmful to aquatic life.
Aquatic toxicity	Not available
Partition coefficient	Not available
Chemical fate information	Not available
Other adverse effects	Not available

13. Disposal Considerations

Disposal instructions	Review federal, state/provincial, and local government requirements prior to disposal.
Waste from residues / unused products	Not available
Contaminated packaging	Not available

14. Transport Information

U.S. Department of Transportation (DOT)

Basic shipping requirements:

Proper shipping name Hydrochloric acid
Hazard class 8
UN number 1789
Packing group II
Additional information:
Special provisions A3, A6, B3, B15, IB2, N41, T8, TP2, TP12



Transportation of Dangerous Goods (TDG - Canada)

Basic shipping requirements:

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



15. Regulatory Information

Canadian federal regulations

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.
Canadian Food Inspection Agency - Letter of No Objection for Non-Food Chemicals received.

Canada - WHMIS - Ingredient Disclosure List

Hydrogen chloride 7647-01-0 1 %

WHMIS status

Controlled

WHMIS classification

Class D - Division 1A, Class E - Corrosive Material

WHMIS labeling



Occupational Safety and Health Administration (OSHA)

29 CFR 1910.1200 hazardous chemical Yes

US Federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

Hydrogen chloride 7647-01-0 5000 Lb final RQ; 2270 kg final RQ

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

Hydrogen chloride 7647-01-0 5000 Lb EPCRA RQ (gas only)

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

Hydrogen chloride 7647-01-0 500 Lb TPQ (gas only)

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

Hydrogen chloride 7647-01-0 1.0 % de minimis concentration (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)

U.S. - CWA (Clean Water Act) - Hazardous Substances

Hydrogen chloride 7647-01-0 Present

CERCLA (Superfund) reportable quantity

Hydrogen chloride: 5000.0000

Superfund Amendments and Reauthorization Act of 1986 (SARA)

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

Section 302 extremely hazardous substance Yes

Section 311 hazardous chemical Yes

Clean Air Act (CAA) HAPS list

Clean Water Act (CWA) Hazardous substance

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

U.S. - California - 8 CCR Section 339 - Director's List of Hazardous Substances

Hydrogen chloride 7647-01-0 Present

U.S. - Illinois - Toxic Air Contaminants

Hydrogen chloride 7647-01-0 Present (aerosol)

U.S. - Louisiana - Reportable Quantity List for Pollutants

Hydrogen chloride 7647-01-0 5000 Lb final RQ; 2270 kg final RQ

U.S. - Massachusetts - Right To Know List

Hydrogen chloride 7647-01-0 Extraordinarily hazardous

U.S. - Minnesota - Hazardous Substance List

Hydrogen chloride 7647-01-0 Present

U.S. - New Jersey - Right to Know Hazardous Substance List

Hydrogen chloride 7647-01-0 sn 1012

U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances

Hydrogen chloride 7647-01-0 5000 Lb RQ (air); 100 lb RQ (land/water)

U.S. - North Carolina - Control of Toxic Air Pollutants

Hydrogen chloride 7647-01-0 0.7 mg/m3 (acute irritants)

U.S. - Ohio - Extremely Hazardous Substances - Threshold Quantities

Hydrogen chloride 7647-01-0 500 Lb TQ (gas only)

U.S. - Pennsylvania - RTK (Right to Know) List

Hydrogen chloride 7647-01-0 Environmental hazard

U.S. - Rhode Island - Hazardous Substance List

Hydrogen chloride 7647-01-0 Toxic; Flammable

Inventory name

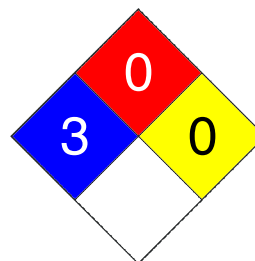
Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

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

16. Other Information

LEGEND HMIS/NFPA	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

Health	/ 3
Flammability	0
Physical Hazard	1
Personal Protection	X



Disclaimer

Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

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Prepared by

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Other information

For an updated MSDS, please contact the supplier/manufacturer listed on the first page of the document.

This MSDS conforms to the ANSI Z400.1/Z129.1-2010 Standard.

Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations.

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