30% Hydrochloric Acid

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	**30% Hydrochloric Acid**
UN-Number	UN1789
Synonyms	Muriatic Acid
Supplier Address*	Linde Gas North America LLC - Linde Merchant Production Inc. - Linde LLC 575 Mountain Ave. Murray Hill, NJ 07974 Phone: 908-464-8100 www.lindeus.com Linde Gas Puerto Rico, Inc. Las Palmas Village Road No. 869, Street No. 7 Catano, Puerto Rico 00962 Phone: 787-641-7445 www.pr.lindegas.com Linde Canada Limited 5860 Chedworth Way Mississauga, Ontario L5R 0A2 Phone: 905-501-1700 www.lindecanada.com * May include subsidiaries or affiliate companies/divisions. For additional product information contact your local customer service.
Chemical Emergency Phone Number	Chemtrec: 1-800-424-9300 for US/ 703-527-3887 outside US

2. HAZARDS IDENTIFICATION

DANGER!

Emergency Overview

Corrosive
The product causes burns of eyes, skin and mucous membranes.

Appearance Colorless. **Physical State** Liquid. **Odor** Sharp, Suffocating

Potential Health Effects

Principle Routes of Exposure Eye contact. Skin contact. Inhalation.

Acute Toxicity

Inhalation	Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Chemical pneumonitis and pulmonary edema result from exposure to the lower respiratory tract and deep lung. Residual pulmonary malfunction might occur.
Eyes	Corrosive to the eyes and may cause severe damage including blindness. Risk of serious damage to eyes.
Skin	Corrosive to skin. Reacts with water very rapidly yielding hydrochloric acid. Hydrogen chloride burns exhibit severe pain, redness, possible swelling and early necrosis.
Skin Absorption Hazard	No known hazard by skin absorption.
Ingestion	Ingestion causes burns of the upper digestive and respiratory tract.
Chronic Effects	Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen.
Aggravated Medical Conditions	Pre-existing eye disorders. Skin disorders. Respiratory disorders.
Environmental Hazard	See Section 12 for additional Ecological Information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Volume %	Chemical Formula
Water	7732-18-5	68-80	H_2O
Hydrogen chloride	7647-01-0	20-32	HCl

4. FIRST AID MEASURES

General Advice	Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.
Eye Contact	Immediate medical attention is required. In case of contact with substance, immediately flush eyes with running water for at least 30 minutes. Keep eye wide open while rinsing. Do not rub affected area.
Skin Contact	Immediate medical attention is required. Wash off immediately with soap and plenty of water for at least 30 minutes while removing all contaminated clothing and shoes.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a physician immediately.
Ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Drink plenty of water. Call a physician or Poison Control Center immediately.
Notes to Physician	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.
Protection of First-aiders	Use personal protective equipment. Avoid contact with skin, eyes and clothing.

5. FIRE-FIGHTING MEASURES

Flammable Properties	Not flammable.

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Hazardous Combustion Products	None.

Explosion Data

Sensitivity to Mechanical Impact	None
Sensitivity to Static Discharge	None
Specific Hazards Arising from the Chemical	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. Liberates flammable hydrogen gas on contact with water and other materials (See Section 10).
Protective Equipment and Precautions for Firefighters	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Additional chemical protective clothing may be required to protect from toxic decomposition products.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Use personal protective equipment. Do not touch or walk through spilled material. Do not get in eyes, on skin, or on clothing.
Environmental Precautions	Should not be released into the environment. Do not allow material to contaminate ground water system.
Methods for Containment	Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.
Methods for Cleaning Up	Dam up. Soak up with inert absorbent material. Take up mechanically and collect in suitable container for disposal. Clean contaminated surface thoroughly.
Other Information	Refer to protective measures listed in Sections 7 and 8.

7. HANDLING AND STORAGE

Handling	Use only in area provided with appropriate exhaust ventilation. Wear personal protective equipment. Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Hydrogen chloride 7647-01-0	Ceiling: 2 ppm	Ceiling: 5 ppm Ceiling: 7 mg/m^3	IDLH: 50 ppm Ceiling: 5 ppm Ceiling: 7 mg/m^3

Immediately Dangerous to Life or Health.

Other Exposure Guidelines	Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).
Engineering Measures	Showers. Eyewash stations. Ventilation systems.
Ventilation	Use ventilation adequate to keep exposures below recommended exposure limits.

Personal Protective Equipment

Eye/Face Protection	Tightly fitting safety goggles. Face-shield.
Skin and Body Protection	Appropriate protective and chemical resistant gloves, clothing and splash protection, or fully encapsulating vapor protective clothing to prevent exposure. For materials of construction consult protective clothing manufacturer's specifications.
Respiratory Protection	
General Use	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
Emergency Use	Use positive pressure air line respirator or self-contained breathing apparatus for exposure over exposure limits or emergency use.
Hygiene Measures	For environmental protection, remove and wash all contaminated protective equipment before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Colorless.	Odor	Sharp, Suffocating.
Odor Threshold	No information available	Physical State	Liquid
Flash Point	No information available.	Autoignition Temperature	Not applicable
Decomposition Temperature	No information available.	Boiling Point/Boiling Range	108.6°C(20.2% HCL)
Freezing Point	No information available	Molecular Weight	36.4 g/mol
Water Solubility	Easily soluble in cold water, Easily soluble in hot water	Evaporation Rate	No information available
Vapor Pressure	Partial Pressure: 0.027 kPa (20%) 1.41 kPa (30%)	Vapor Density	No data available.
Liquid Density	1.098 (20%) 1.149 (30%)	VOC Content (%)	Not applicable.

Flammability Limits in Air

Upper	Not applicable
Lower	Not applicable

Note: pH: <0.1

10. STABILITY AND REACTIVITY

Stability	Stable under recommended storage conditions.
Incompatible Products	Incompatible with strong acids and bases. Incompatible with oxidizing agents. Metals.
Conditions to Avoid	High temperatures.
Hazardous Decomposition Products	Thermal decomposition can lead to release of irritating gases and vapors.
Hazardous Reactions	Highly soluble in water-will react to yield dense, acrid HCL fumes. Reacts vigorously with alkalis and many organic materials with liberation of heat. Strong oxidizers cause release of chlorine. Hydrochloric acid solutions react with metals to release flammable hydrogen gas.

Hazardous Polymerization Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information No acute toxicity information is available for this product.

LD50 Oral: No information available.

LD50 Dermal: No information available.

LC50 Inhalation: No information available.

Repeated Dose Toxicity No information available.

Chronic Toxicity

Chronic Toxicity Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen.

Carcinogenicity

Chemical Name	ACGIH	IARC	NTP	OSHA
Hydrogen chloride		Group 3		

IARC: (International Agency for Research on Cancer)
Group 3: Not Classifiable as to its Carcinogenicity to Humans

Irritation No information available.

Sensitization No information available.

Reproductive Toxicity No information available.

Developmental Toxicity No information available.

Synergistic Materials None known.

Target Organ Effects Respiratory system.

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

Ozone depletion potential; ODP; (R-11 = 1): Does not contain ozone depleting chemical (40 CFR Part 82).

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Hydrogen chloride		LC50 96 h: = 282 mg/L static (Gambusia affinis)		

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods	This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261). US EPA waste number: D002
Contaminated Packaging	Do not re-use empty containers. The hazard and precautionary statements displayed on the label also apply to any residues left in the container.

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Hydrochloric acid
Hazard Class	8
Subsidiary Class	
UN-Number	UN1789
Packing Group	II
Description	UN1789, Hydrochloric acid, 8, , II

TDG

Proper Shipping Name	Hydrochloric acid
Hazard Class	8
UN-Number	UN1789
Packing Group	II
Description	UN1789, HYDROCHLORIC ACID, 8, II

MEX

Proper Shipping Name	Hydrochloric acid
Hazard Class	8
UN-Number	UN1789
Description	UN1789 Hydrochloric acid, 8, II
Packing Group	II

IATA

UN-Number	UN1789
Proper Shipping Name	Hydrochloric acid
Hazard Class	8
Packing Group	II
ERG Code	8L
Description	UN1789, Hydrochloric acid, 8, II
Maximum Quantity for Passenger	1 L
Maximum Quantity for Cargo Only	30 L
Limited Quantity	0.5 L

IMDG/IMO

Proper Shipping Name	Hydrochloric acid
Hazard Class	8
UN-Number	UN1789
Packing Group	II
EmS No.	F-A, S-B
Description	UN1789, Hydrochloric acid, 8, II

ADR

Proper Shipping Name	Hydrochloric acid
Hazard Class	8
UN-Number	UN1789
Packing Group	II
Classification Code	C1
Description	UN1789 Hydrochloric acid, 8, II

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL	Complies
EINECS/ELINCS	Complies

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

U.S. Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS-No	SARA 313 - Threshold Values %
Hydrogen chloride	7647-01-0	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act
This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Hydrogen chloride	5000 lb			X

Risk and Process Safety Management Programs
This material, as supplied, contains one or more regulated substances with specified thresholds under 40 CFR Part 68 or regulated as a highly hazardous chemical pursuant to the 29 CFR Part 1910.110 with specified thresholds:

Chemical Name	U.S. - CAA (Clean Air Act) - Accidental Release Prevention - Toxic Substances	U.S. - CAA (Clean Air Act) - Accidental Release Prevention - Flammable Substances	U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals
Hydrogen chloride	5000 lbs		5000 lb

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)
This product contains the following substances which are listed hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act:

Chemical Name	CAS-No	HAPS data	VOC Chemicals	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Hydrogen chloride	7647-01-0	X			

CERCLA/SARA
This material, as supplied, contains one or more substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355):

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	TPQ
Hydrogen chloride	5000 lb	5000 lb	500 lb TPQ

U.S. State Regulations

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

U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Hydrogen chloride	X	X	X	X	X

International Regulations

Chemical Name	Carcinogen Status	Exposure Limits
Hydrogen chloride		Mexico: Ceiling 5 ppm Mexico: Ceiling 7 mg/m^3

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class
E Corrosive material

Chemical Name	NPRI
Hydrogen chloride	X

Legend
NPRI - National Pollutant Release Inventory

16. OTHER INFORMATION

Prepared By	Product Stewardship 23 British American Blvd. Latham, NY 12110 1-800-572-6501
Issuing Date	08-May-2012
Revision Date	
Revision Number	0
Revision Note	Initial Release.

NFPA	**Health Hazard** 3	**Flammability** 0	**Stability** 1	**Physical and Chemical Hazards** -
HMIS	**Health Hazard** 3	**Flammability** 0	**Physical Hazard** 1	**Personal Protection** -

Note: Ratings were assigned in accordance with Compressed Gas Association (CGA) guidelines as published in CGA Pamphlet P-19-2009, CGA Recommended Hazard Ratings for Compressed Gases, 3rd Edition.

End of Safety Data Sheet