

Product Identifier: Hydrochloric Acid Solution (20%)

SDS ID: C-063

**\*\*\* Section 1 - Identification\*\*\***

Product Identifier: Hydrochloric Acid Solution (20%)

Product Code: NA

Chemical Name: Hydrochloric Acid Solution, Inorganic Acid, Mineral Acid.

Recommended Use: Miscellaneous

**Manufacturer Information**

Corning Incorporated - Wilmington Plant  
310 N. College Rd.  
Wilmington, NC 28405

Phone: (910) 784-7872  
Fax: (910) 784-7901  
Emergency # 24 Hr CHEMTREC U.S. (800) 424-9300  
24 Hr CHEMTREC International (703) 527-3887

**General Comments**

NOTE: CHEMTREC telephone number is to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals.

**\*\*\* Section 2 - Hazard(s) Identification \*\*\*****Classification in accordance with 29 CFR 1910.1200.**

Acute Toxicity (Oral), Category 4  
Acute Toxicity (Inhalation), Category 3  
Skin Corrosion / Irritation, Category 1B  
Eye Damage / Irritation, Category 1  
Specific Target Organ Toxicity - Single Exposure, Category 1 (respiratory system)  
Specific Target Organ Toxicity - Repeated Exposure, Category 1 (respiratory system and teeth)  
Hazardous to the Aquatic Environment - Acute Hazard, Category 2

**GHS LABEL ELEMENTS****Symbol(s)****Signal Word**

DANGER

**Hazard Statement(s)**

Harmful if swallowed.  
Toxic if inhaled.  
Causes severe skin burns and eye damage.  
Causes damage to respiratory system.  
Causes damage to respiratory system and teeth through prolonged or repeated exposure.  
Toxic to aquatic life.

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**Precautionary Statement(s)****Prevention**

Do not breathe vapor or mist. Do not eat, drink, or smoke when using this product. Wash thoroughly after handling. Wear protective gloves/clothing and eye/face protection. Use only outdoors or in a well-ventilated area. Avoid release to the environment.

**Response**

If exposed: Call a POISON CENTER or doctor/physician. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or doctor/physician. IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

**Storage**

Store in a well-ventilated place. Keep container tightly closed. Store locked up.

**Disposal**

Dispose of contents/container in accordance with local/regional/national/international regulation.

<b>*** Section 3 - Composition / Information on Ingredients ***</b>
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CAS	Component	Percent
7732-18-5	Water	80
7647-01-0	Hydrogen Chloride	20

<b>*** Section 4 - First-aid Measures ***</b>
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**Description of Necessary Measures****Inhalation**

Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. If breathing has stopped have qualified personnel give artificial respiration.

**Skin Contact**

Immediately flush exposed area with large amounts of water while removing contaminated clothing. Immediately call a POISON CENTER or doctor/physician. Thoroughly clean and dry contaminated clothing and shoes before reuse.

**Eye Contact**

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. Continue to flush eyes while awaiting medical attention.

**Ingestion**

Do not induce vomiting. Rinse mouth. Immediately call a POISON CENTER or doctor/physician.

**Most Important Symptoms/Effects****Acute**

harmful if swallowed, toxic if inhaled, respiratory tract burns, skin burns, eye burns, eye damage, mucous membrane burns, respiratory system damage

**Delayed**

respiratory system damage, corrosion to teeth

**Indication of immediate Medical Attention and Special Treatment**

Treat symptomatically and supportively.

<b>*** Section 5 - Fire-fighting Measures ***</b>
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**Suitable Extinguishing Media**

Use methods for the surrounding fire.

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**Unsuitable Extinguishing Media**

Do not use water jets.

**Specific Hazards Arising from the Chemical**

This material will not burn. May react with metals or heat to release flammable hydrogen gas. Thermal decomposition liberates hydrogen gas and toxic hydrogen chloride gas.

**Hazardous Combustion Products**

Hazardous combustion products include hydrogen chloride and hydrogen gas.

**Special Protective Equipment and Precautions for Firefighters**

Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Fire fighters should avoid inhaling any combustion products.

**Fire Fighting Measures**

Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay upwind and keep out of low areas.

**\*\*\* Section 6 - Accidental Release Measures \*\*\*****Personal Precautions, Protective Equipment and Emergency Procedures**

Do not touch or walk through spilled material. Wear personal protective clothing and equipment, see Section 8.

**Methods and Materials for Containment and Cleaning Up**

Carefully neutralize the dilute liquid with lime slurry, soda ash, limestone, caustic soda or other alkaline material. Place in a properly labeled container. Do not flush washings to sewer or other waterways. Avoid release to the environment. Do not use combustible absorbents, such as sawdust. For larger quantities, contain spilled liquid and neutralize before disposal. Keep unnecessary personnel away. Dispose in accordance with all applicable local regulations.

**\*\*\* Section 7 - Handling and Storage \*\*\*****Precautions for Safe Handling**

Do not breathe vapors or fumes. Prevent all contact with skin and eyes. Wash thoroughly after handling. Use personal protective equipment as required. Use only in well ventilated areas. Keep container closed. When diluting, never add water to acid! Water added to acid can cause violent boiling and splashing. Do not wash out or reuse container for other purposes as residual liquid and vapors may be present.

**Condition for Safe storage, Including any incompatibilities**

Store in a cool, dry, ventilated area. Keep out of direct sunlight, and away from heat, water, and incompatible materials. Keep away from incompatible materials.

**Incompatibilities**

Incompatible materials include strong bases, metals, oxides of metals, amines, silicates, formaldehyde, and cyanides.

**\*\*\* Section 8 - Exposure Controls / Personal Protection \*\*\*****Exposure Limits**

The OSHA air contaminants exposure limits (PELs) are those provided in the 1989 update to 29 CFR 1910.1000. These limits were vacated by OSHA and may not be enforceable. Observe all applicable exposure limits.

**Component Exposure Limits****Hydrogen Chloride (7647-01-0)**

<b>ACGIH:</b>	2 ppm Ceiling
<b>OSHA (Final):</b>	5 ppm Ceiling; 7 mg/m3 Ceiling
<b>OSHA (Vacated):</b>	5 ppm Ceiling; 7 mg/m3 Ceiling
<b>NIOSH:</b>	5 ppm Ceiling; 7 mg/m3 Ceiling
<b>Alberta:</b>	2 ppm Ceiling; 3 mg/m3 Ceiling
<b>British Columbia:</b>	2 ppm Ceiling
<b>Manitoba:</b>	2 ppm Ceiling
<b>New Brunswick:</b>	5 ppm Ceiling; 7.5 mg/m3 Ceiling

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<b>NW Territories:</b>	2 ppm Ceiling
<b>Nova Scotia:</b>	2 ppm Ceiling
<b>Nunavut:</b>	5 ppm Ceiling; 7.5 mg/m <sup>3</sup> Ceiling
<b>Ontario:</b>	2 ppm Ceiling
<b>Quebec:</b>	5 ppm Ceiling; 7.5 mg/m <sup>3</sup> Ceiling
<b>Saskatchewan:</b>	2 ppm Ceiling
<b>Yukon:</b>	5 ppm Ceiling; 7 mg/m <sup>3</sup> Ceiling

**Appropriate Engineering Controls**

Use appropriate local exhaust ventilation to keep exposures below the regulated limits.

**Individual Protection Measures, such as Personal Protective Equipment****Eyes/Face Protection**

Wear chemical goggles or full face shield with safety glasses if splashing is possible.

**Skin Protection**

Wear appropriate chemical resistant clothing. Additional protection, including impervious boots, apron, or coveralls, should be worn as needed.

**Respiratory Protection**

If permissible levels are exceeded use NIOSH air purifying respirator with acid-gas cartridge or air-supplied respirator .

**Gloves recommendations**

Wear appropriate chemical resistant gloves.

**General Information**

Use good hygiene practices when handling this material including changing and laundering work clothing after use. A safety shower should be available. An eyewash fountain should be available in the work area.

<b>*** Section 9 - Physical and Chemical Properties ***</b>
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<b>Appearance:</b>	Clear, slight yellowish color	<b>Odor:</b>	Pungent
<b>Physical State:</b>	Liquid	<b>pH:</b>	<0.1 ( conc. <= 1.0N), <1.1 ( conc. <= 0.1N)
<b>Vapor Pressure:</b>	NA	<b>Vapor Density:</b>	1.27 (air = 1)
<b>Boiling Point:</b>	214 to 217 °F (101 to 103 °C)	<b>Solubility (H<sub>2</sub>O):</b>	Infinitely soluble
<b>Specific Gravity:</b>	1.09 gm/cm <sup>3</sup> (density)	<b>Percent Volatile:</b>	100% @ 70°F (21°C)
<b>Flash Point:</b>	Not applicable	<b>Flash Point Method:</b>	Not applicable
<b>Auto Ignition:</b>	Not applicable	<b>Lower Flammability Limit:</b>	Not applicable
<b>Upper Flammability Limit:</b>	Not applicable		

<b>*** Section 10 - Stability and Reactivity ***</b>
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**Reactivity**

No hazard expected.

**Chemical Stability**

Stable

**Possibility of Hazardous Reactions**

Will not occur.

**Conditions to Avoid**

Heat. Contact with most metals produces highly flammable hydrogen gas.

**Incompatible Materials**

A strong mineral acid, hydrochloric acid is highly reactive with strong bases, metals, metal oxides, hydroxides, amines, carbonates, phosphides, acetylides, borides, carbides, silicates, vinyl acetate, formaldehyde, cyanides, and sulfides

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**Hazardous Decomposition Products**

Hazardous decomposition products include hydrogen chloride gas and hydrogen gas.

**\*\*\* Section 11 - Toxicological Information \*\*\*****Acute Toxicity**

Corrosive! Hydrochloric acid solutions can cause severe irritation and chemical burns to the eyes, skin, and respiratory system. Ingestion may result in moderate to severe burns to the mouth, esophagus, and can severely burn the digestive tract.

**Component Analysis - LD50/LC50****Water (7732-18-5)**

Oral LD50 Rat &gt;90 mL/kg

**Hydrogen Chloride (7647-01-0)**

Dermal LD50 Rabbit &gt;5010 mg/kg; Inhalation LC50 Rat 1.68 mg/L 1 h (mist); Oral LD50 Rat 238 - 277 mg/kg

**Chronic Toxicity**

Chronic exposure to hydrochloric acid solutions may be associated with changes in pulmonary function, chronic bronchitis, dermatitis, erosion of dental enamel, conjunctivitis, and upper respiratory tract anomalies.

**ROUTES OF EXPOSURE****Inhalation**

Corrosive! Inhalation may cause severe irritation and possible burns with coughing and choking.

**Ingestion**

Corrosive! Ingestion may cause irritation and burns from the mouth to the stomach.

**Skin**

Corrosive! Causes burns.

**Eyes**

Corrosive! Causes burns.

**Immediate Effects**

respiratory tract burns, skin burns, eye burns, mucous membrane burns

**Delayed Effects**

respiratory system damage, corrosion to teeth

**Medical Conditions Aggravated by Exposure**

None known.

**Irritation/Corrosivity Data**

respiratory tract burns, skin burns, eye burns, mucous membrane burns

**Respiratory Sensitization**

May cause an allergic respiratory reaction (sensitization).

**Dermal Sensitization**

No information available for the product.

**Germ Cell Mutagenicity**

No information available for the product.

**Carcinogenicity**

No information available for product.

**Component Carcinogenicity****Hydrogen Chloride (7647-01-0)**

**ACGIH:** A4 - Not Classifiable as a Human Carcinogen

**IARC:** Monograph 54 [1992] (Group 3 (Not classifiable))

**Reproductive Toxicity**

No information available for the product.

**Specified Target Organ Toxicity - Single Exposure**

respiratory system

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**Specified Target Organ Toxicity - Repeated Exposure**

respiratory system, teeth

**Aspiration Hazard**

No data available.

**Other Toxicological Information**

Individuals with pre-existing skin or eye irritation may be more susceptible to the effects of exposure.

**\*\*\* Section 12 - Ecological Information \*\*\*****Ecotoxicity**

Product is expected to be toxic to aquatic life

Aquatic Toxicity:

Trout, LC100 (24 hours) = 10 mg/l;

Goldfish, LC50 (1 to 2 hour survival time) = 178 mg/l.

**Component Analysis - Ecotoxicity - Aquatic Toxicity**

No ecotoxicity data are available for this product's components.

**Environmental Fate**

Product will neutralize upon contact with carbonate compounds in soil. When released to soil, product may leach into groundwater.

**Persistence & Degradability**

No information available for the product.

**Bioaccumulation**

No information available for the product.

**Mobility**

No information available for the product.

**\*\*\* Section 13 - Disposal Considerations \*\*\*****Disposal Methods**

Clean up and dispose of waste in accordance with all federal, state, and local environmental regulations.

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

**US EPA Waste Number & Descriptions**

If deemed as a hazardous waste, then this product is considered to be a D002 corrosive waste according to the EPA.

**Component Waste Numbers**

No EPA Waste Numbers are applicable for this product's components.

**Disposal of Contaminated Packaging**

Dispose in accordance with all applicable local regulations.

**\*\*\* Section 14 - Transport Information \*\*\*****US DOT Information****Shipping Name:** Hydrochloric acid, solution**UN/NA #:** UN1789 **Hazard Class:** 8 **Packing Group:** II**Required Label(s):** CORROSIVE**DOT Reportable Quantities****Hydrogen Chloride (7647-01-0)**

5000 lbs RQ; 2270 kg RQ

**TDG Information****Shipping Name:** Hydrochloric acid, solution**UN/NA #:** UN1789 **Hazard Class:** 8 **Packing Group:** II

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Required Label(s): CORROSIVE

**IATA Information**

Shipping Name: Hydrochloric acid

UN #: UN1789 Hazard Class: 8 Packing Group: II

Required Label(s): 8

**\*\*\* Section 15 - Regulatory Information \*\*\*****U.S. Federal Regulations**

All components are on the U.S. EPA TSCA Inventory List.

**Component Analysis**

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

**Hydrogen Chloride (7647-01-0)**

CERCLA: 5000 lb final RQ; 2270 kg final RQ

SARA 302: 500 lb TPQ (gas only)

SARA 313: 1.0 % de minimis concentration (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)

**SARA 311/312 Hazardous Categories (40 CFR 370 Subparts B and C)**

Acute Health Yes Chronic Health Yes Fire No Pressure No Reactive No

**U.S. State Regulations**

Other state regulations may apply. Check individual state requirements.

**Component Analysis - State**

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
Hydrogen Chloride	7647-01-0	Yes	Yes	Yes	Yes	Yes

Not regulated under California Proposition 65.

**Canadian WHMIS Information**

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

**WHMIS Classification:**

Class E- Corrosive

**Component Analysis - WHMIS IDL**

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

**Hydrogen Chloride (7647-01-0)**

1 %

**Additional Regulatory Information****Inventory**

Component	CAS #	TSCA	DSL	EINECS
Water	7732-18-5	Yes	Yes	Yes
Hydrogen Chloride	7647-01-0	Yes	Yes	Yes



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**\*\*\* Section 16 - Other Information \*\*\*****NFPA Ratings: Health: 3 Fire: 0 Reactivity: 0**

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

**HMIS Ratings: Health: 3 Fire: 0 Physical Hazard: 0 Pers. Prot.:** Impervious gloves, face shield

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe \* = Chronic hazard

**Key/Legend**

ACGIH = American Conference of Governmental Industrial Hygienists; CAS = Chemical Abstracts Service; CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act; CFR = Code of Federal Regulations; CPR = Controlled Products Regulations; DOT = Department of Transportation; DSL = Domestic Substances List; EINECS = European Inventory of Existing Commercial Chemical Substances; EPA = Environmental Protection Agency; IARC = International Agency for Research on Cancer; IATA = International Air Transport Association; mg/Kg = milligrams per Kilogram; mg/L = milligrams per Liter; mg/m<sup>3</sup> = milligrams per Cubic Meter; MSHA = Mine Safety and Health Administration; NA = Not Applicable or Not Available; NIOSH = National Institute for Occupational Safety and Health; NJTSR = New Jersey Trade Secret Registry; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; SARA = Superfund Amendments and Reauthorization Act; TDG = Transport Dangerous Goods; TSCA = Toxic Substances Control Act; WHMIS = Workplace Hazardous Materials Information System.

**SDS History**

Revision 7.0000, 16-JUL-2015: Updated to OSHA GHS format.

Revision 6.0000, 16-SEP-2013: Regulatory Update.

Revision 5.0000, 21-MAY-2012: Regulatory Update.

Revision 4.0000, 17-FEB-2009: Regulatory Update.

Revision 3.0000, 23-NOV-2005: Regulatory Update/Converted to ANSI Z400.1-2004.

Revision 2.0000, 11-OCT-2002: Sections 1,2,3,4,5, 6,7,8,9,10,11,12,15,16 were revised due to formulation/regulatory updates.

Revision 1.0000, 16-FEB-1999: New MSDS.

**Other Information**

Reasonable care has been taken in the preparation of this information, but Corning makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. Corning makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use.

End of Sheet C-063