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Version 1

1. Identification

Product identifier**Product Name:** Hydrochloric Acid 10% FCC**Other means of identification****Product Code:** 905**Synonyms:** Muriatic acid; Aqueous hydrogen chloride**UN/ID No:** UN1789**Recommended use of the chemical and restrictions on use****Recommended Use:** Industrial, Manufacturing or Laboratory use.**Restrictions on Use:** None known**Manufacturer Address**

Anderson Chemical Company, 325 South Davis Avenue, Litchfield, MN 55355 (320-693-2477)

Emergency telephone number

Chemtrec 1-800-424-9300

Emergency telephone number**Emergency Telephone:** CHEMTREC: 1-800-424-9300 (US)

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 1 Sub-category A
Serious eye damage/eye irritation	Category 1
Corrosive to metals	Category 1

Hazards not otherwise classified (HNOC)

Not applicable

Label elements**Signal word:** Danger**Hazard statements:**

Harmful if inhaled

Causes severe skin burns and eye damage

May be corrosive to metals



Precautionary Statements - Prevention:

Use only outdoors or in a well-ventilated area
 Do not breathe dusts or mists
 Wash face, hands and any exposed skin thoroughly after handling
 Wear protective gloves/protective clothing/eye protection/face protection
 Keep only in original container

Precautionary Statements - Response:

Immediately call a POISON CENTER or doctor
 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
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower
 Wash contaminated clothing before reuse
 IF INHALED: Remove person to fresh air and keep comfortable for breathing
 Immediately call a POISON CENTER or doctor
 IF SWALLOWED: Rinse mouth. DO NOT induce vomiting
 Absorb spillage to prevent material damage

Precautionary Statements - Storage:

Store locked up
 Store in corrosion resistant container with a resistant inner liner

Precautionary Statements - Disposal:

Dispose of contents/container to an approved waste disposal plant

Unknown Acute toxicity: Not applicable

Other Information

Not applicable

3. Composition/information on ingredients

Chemical name	CAS No.	Weight-%
Hydrochloric acid	7647-01-0	9.7-10.3
Water	7732-18-5	Balance

Any concentration shown as a range is due to batch variation.

4. First-aid measures**Description of first aid measures**

General advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Inhalation	Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical advice/attention.
Eye contact	In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical advice/attention. The corneas of the eyes are especially sensitive and exposure to it or its vapors immediately causes severe irritation. If the eyes are not quickly and thoroughly irrigated with water, partial or total visual impairment or blindness can occur.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention. Thoroughly clean or destroy

contaminated shoes. No oils, ointments, or neutralizing chemicals should be applied unless specified by a physician.

Ingestion Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get immediate medical advice/attention. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. If vomiting occurs spontaneously, rinse mouth and give water again.

Self-protection of the first aider Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8). Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Most important symptoms and effects, both acute and delayed

Symptoms Redness. Burning. May cause blindness. Coughing and/ or wheezing.

Indication of any immediate medical attention and special treatment needed

Note to physicians 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. Chronic occupational exposure to hydrochloric acid has been reported to cause chronic bronchitis. Prolonged exposure to low concentrations may also cause dental discoloration and erosion.

5. Fire-fighting measures

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Adding water to concentrated product generates large amounts of heat. Water may be used to cool containers and to knock down vapors in a fire situation.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. Do not allow run-off from fire-fighting to enter drains or water courses. Most vapors are heavier than air. Vapors may spread along ground and collect in low or confined areas (sewers, basements, tanks). Contact with metals may evolve flammable hydrogen gas.

Hazardous combustion products Hydrogen chloride (HCl). Hydrochloric acid fumes. Hydrogen gas. Emits toxic chlorine fumes when heated to decomposition.

Explosion Data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Corrosive material. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Other information Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so. Keep out of drains, sewers, ditches and waterways.

Methods for cleaning up Dike far ahead of liquid spill for later disposal. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

7. Handling and storage

Precautions for safe handling

Advice on safe handling

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. When diluting, always add the product to water. Never add water to the product. Concentrated product reacts violently with water.

Conditions for safe storage, including any incompatibilities

Storage Conditions

Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

Incompatible Materials

Oxidizing agent. Acids. Bases. Amines. Alkali. Metals. Reducing agent. Sulfides. Sulfites. Cyanide compounds. Carbides. Formaldehyde.

Packaging materials

Do not store in aluminum container or use aluminum fittings or transfer lines.

8. Exposure controls/personal protection

Control parameters

Exposure Limits

The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Hydrochloric acid 7647-01-0	Ceiling: 2 ppm	(vacated) Ceiling: 5 ppm (vacated) Ceiling: 7 mg/m ³ Ceiling: 5 ppm Ceiling: 7 mg/m ³	IDLH: 50 ppm Ceiling: 5 ppm Ceiling: 7 mg/m ³

Exposure Guidelines

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering controls

Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection

Face protection shield. Tight sealing safety goggles.

Hand protection

Wear suitable gloves. Impervious gloves.

Skin and body protection

Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

Respiratory protection

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced and ventilation is insufficient, a suitable respirator or evacuation may be required.

Environmental exposure controls

Do not allow into any sewer, on the ground or into any body of water. Local authorities should be advised if significant spillages cannot be contained.

General hygiene considerations Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical State: Liquid
Appearance: Clear
Color: Colorless to light yellow
Odor: Pungent
Odor Threshold: No information available

pH: No information available
Salt Out Point: No information available
Melting Point/Freezing Point: -15 °C / 5 °F
Boiling Point/Boiling Range: No information available
Flash Point: No information available
Evaporation Rate (BuAc=1): No information available
Flammability (solid, gas): No information available
Flammability Limits in Air: No information available
Vapor Pressure (mm Hg): No information available
Vapor density (Air =1): No information available
Specific Gravity (H₂O=1): 1.050
Water Solubility: 100% soluble in water
Solubility(ies): No information available
Partition Coefficient (n-octanol/water): No information available
Autoignition Temperature: No information available
Decomposition Temperature: No information available
Kinematic Viscosity: No information available
Dynamic Viscosity: No information available

Other information

Explosive properties No information available
Oxidizing properties No information available
Molecular Weight: 36.46

10. Stability and reactivity

Reactivity Contact with most metals will generate flammable hydrogen gas. Releases heat and toxic, irritating vapors when mixed with water. Reacts vigorously with strong acid, alkalis, and organic solvents by releasing large amounts of heat. Reacts with strong oxidizing materials causing the release of chlorine.

Chemical stability Stable under normal conditions.

Possibility of hazardous reactions Can react with formaldehyde to form human carcinogen bis(chloromethyl) ether. Hydrogen chloride may react with cyanide, forming lethal concentrations of hydrocyanic acid. Reacts violently with a wide variety of organic and inorganic chemicals including alcohol, carbides, chlorates, picrates, nitrates and metals. Aldehydes and epoxides in the presence of hydrochloric acid cause violent polymerization. Alcohol and glycols in the presence of hydrochloric acid lead to dehydration reactions.

Conditions to avoid Exposure to air or moisture over prolonged periods.

Incompatible Materials Oxidizing agent. Acids. Bases. Amines. Alkali. Metals. Reducing agent. Sulfides. Sulfites. Cyanide compounds. Carbides. Formaldehyde.

Hazardous decomposition products Thermal decomposition can lead to release of irritating and toxic gases and vapors. Chlorine. Hydrogen chloride (HCl). Hydrogen.

11. Toxicological information

Information on likely routes of exposure

Product Information

Inhalation

Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). 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. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal.

Eye contact

Specific test data for the substance or mixture is not available. Causes burns. (based on components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.

Skin contact

Specific test data for the substance or mixture is not available. Causes severe burns.

Ingestion

Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Redness. Burning. May cause blindness. Coughing and/ or wheezing.

Numerical measures of toxicity

Acute Toxicity:

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	2,310.70 mg/kg
ATEmix (dermal)	48,689.42 mg/kg
ATEmix (inhalation-dust/mist)	4.86 mg/l

Component Information

Chemical name	Oral LD ₅₀ :	Dermal LD ₅₀ :	LC ₅₀ (Lethal Concentration):
Hydrochloric acid 7647-01-0	238 - 277 mg/kg (Rat)	> 5010 mg/kg (Rabbit)	= 1.68 mg/L (Rat) 1 h
Water 7732-18-5	> 90 mL/kg (Rat)	-	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Causes severe burns.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity See section 2 for classified hazards based on component information.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Hydrochloric acid 7647-01-0	-	Group 3	-	-

IARC (International Agency for Research on Cancer)

Group 3 - Not Classifiable as to Carcinogenicity in Humans

Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	No information available.
Other Adverse Effects:	No information available.

12. Ecological information

Ecotoxicity	The environmental impact of this product has not been fully investigated.
Persistence and Degradability:	No information available.
Bioaccumulation:	There is no data for this product.
Mobility:	No information available.
Other Adverse Effects:	No information available.

13. Disposal considerations**Waste treatment methods**

Waste from residues/unused products Dispose of in accordance with local, state, and national regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

US EPA Waste Number (product as supplied) D002.

14. Transport information**DOT**

UN/ID No	UN1789
Proper shipping name	HYDROCHLORIC ACID
Hazard Class	8
Packing Group	II
Description	UN1789, HYDROCHLORIC ACID, 8, PG II



15. Regulatory information

International Inventories

Chemical name	TSCA	AICS	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS
Hydrochloric acid 7647-01-0	Present ACTIVE	Present	Present	-	Present	-	Present	Present	Present	Present
Water 7732-18-5	Present ACTIVE	Present	Present	-	Present	-	Present	Present	Present	Present

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

AICS - Australian Inventory of Chemical Substances

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

US 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	SARA 313 - Threshold Values %
Hydrochloric acid 7647-01-0	1.0

SARA 311/312 Hazard Categories

Under the amended regulations at 40 CFR 370, EPCRA 311/312 Tier II reporting for the 2017 and later calendar years will need to be consistent with updated hazard classifications.

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	SARA Extremely Hazardous Substances TPQ
Hydrochloric acid 7647-01-0	5000 lb	5000 lb	500 lb TPQ

Clean Water Act (CWA)

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
Hydrochloric acid 7647-01-0	5000 lb	-	-	X

OSHA - Process Safety Management - Highly Hazardous Chemicals

This product contains one or more substances regulated under Process Safety Management (29 CFR 1910.119).

Chemical name	OSHA - Process Safety Management - Highly Hazardous Chemicals
Hydrochloric acid 7647-01-0	5000 lb TQ 5000 lb TQ anhydrous

Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS)

This product contains one or more substances regulated under the Chemical Facility Anti-Terrorism Standards (6 CFR 27).

Chemical name	Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS)
Hydrochloric acid 7647-01-0	Release - Toxic concentration >=37% Release - Toxic anhydrous Theft - Weapons of Mass Effect anhydrous

16. Other information

Maximum Use (mg/L unless otherwise indicated): N/A (MC)

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Disclaimer:

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet