

SECTION 1 - IDENTIFICATION

Product Identifier: ADOX™ Activator

Product Use: Chlorine Dioxide Precursor

Common Names: Hydrochloric Acid Solution, Hydrogen Chloride Solution <10%

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24 Hr. Emergency #: ChemTrec (800) 424-9300

SECTION 2 - HAZARDS IDENTIFICATION

Classification of the Substance or Mixture:
 Acute Toxicity- Category 4
 Skin Corrosion/Irritation- Category 1
 Specific Target Organ Toxicity- Single Exposure, Category 3
 Serious Eye Damage- Category 1



Signal Word: DANGER

Hazard Statement(s):
 H314: Causes severe skin burns and eye damage.
 H335: May cause respiratory irritation.
 H336: May cause drowsiness or dizziness.

Precautionary Statements:

Prevention-

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P261: Avoid breathing dust/fume/gas/mist/vapors/spray.
 P262: Do not get in eyes, on skin, or on clothing.
 P264: Wash skin thoroughly after handling.
 P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response-

P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
 P301+330+331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 P303+361+353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P305+351+338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
 P321: Specific treatment (see supplementary first aid instructions on this label).
 P362: Take off contaminated clothing and wash before reuse.

Storage-

P403+233: Store in a well ventilated place. Keep container tightly closed.
 P405: Store locked up.

Disposal-

P501: Dispose of contents/container to an approved waste disposal plant.

SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient(s)	CAS No.	Concentration (%)
Hydrochloric Acid	7647-01-0	9%

SECTION 4 - FIRST-AID MEASURES

Inhalation:	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give Oxygen. Get medical attention immediately.
Skin Contact:	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Call a physician immediately.
Eye Contact:	Flush with large amounts of water for at least 15 minutes, lifting upper and lower lids occasionally. Remove contact lenses if present and easy to do so. Seek immediate medical attention.
Ingestion:	DO NOT INDUCE VOMITING! Give large quantities of water or milk, if available. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Most Important Symptoms And Effects, Both Acute And Delayed:	The most important known symptoms and effects are described in the labelling (see Section 2) and/or Section 11.
Indication Of Any Immediate Medical Attention And Special Treatment Needed:	No data available.

SECTION 5 - FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:	Water Spray Neutralize with soda ash or slake lime.
Special Hazards Arising From The Substance Or Mixture:	Extreme heat or contact with metals can release flammable Hydrogen gas.
Special Protective Equipment And Precautions For Firefighters:	Firefighters should wear full-face, self-contained breathing apparatus. If incinerated, may release toxic fumes. Use water spray to cool unopened containers. Structural firefighter's protective clothing is ineffective for fires involving Hydrochloric Acid. Stay away from ends of tanks.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, And Emergency Procedures:	Use personal protective equipment. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area of leak or spill.
Environmental Precautions:	Prevent further release (leakage/spillage) if safe to do so. Do not allow product to enter drains. Do not allow to drain to environment. Do not flush to sewer. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802. Dilute with plenty of water.
Methods And Materials For Containments And Cleaning Up:	Neutralize with alkaline material (soda ash, lime,) then absorb with an inert material (e.g., vermiculite, dry sand, earth,) and place in a chemical waste container. Do not use combustible materials, such as saw dust. Ensure adequate ventilation.
Reference To Other Sections:	See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for information on proper disposal.

SECTION 7 - HANDLING AND STORAGE

Handling Precautions: Avoid contact with eyes, skin, or clothing.
 Use approved containers only.
 Keep containers closed when not in use.
 Do not expose containers to open flame or excessive heat.
 Do not puncture or drop containers.
 Handle with care and avoid spillage on the floor.
 Keep material out of reach of children.
 Keep material away from incompatible materials.
 Wash hands thoroughly after handling.
 Ensure adequate ventilation.
 When diluting, the acid should always be added slowly to water and in small amounts. Never use hot water and never add water to the acid.
 When opening metal containers, use non-sparking tools because of the possibility of Hydrogen gas being present.

Storage Requirements: Keep container tightly closed.
 Store in a cool, dry, well-ventilated place.
 Do not store in direct sunlight.

Incompatible Materials: A strong mineral acid, concentrated Hydrochloric Acid is highly reactive with strong bases, metals, metal oxides, hydroxides, amines, carbonates, and other alkaline materials. Incompatible with materials such as cyanides, sulfides, sulfites, and Formaldehyde.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

Component(s)	CAS No.	OSHA			NIOSH		ACGIH	
		<u>PEL</u>	<u>Ceiling</u>	<u>STEL</u>	<u>REL</u>	<u>Ceiling</u>	<u>TLV</u>	<u>Ceiling</u>
Hydrochloric acid	7647-01-0	0.3 ppm 0.45 mg/m ³	2 ppm 2.9 mg/m ³		5 ppm 7 mg/m ³	5 ppm 7 mg/m ³	2 ppm 2.9 mg/m ³	2 ppm 2.9 mg/m ³

Engineering Controls:

All ventilation should be designed in accordance with OSHA standard (29 CFR 1910.94).
 Use local exhaust at filling zones and where leakage and dust formation is probable. Use mechanical (general) ventilation for storage areas.
 Use appropriate ventilation as required to keep Exposure Limits in Air below TLV & PEL limits.

Personal Protective Equipment:

All safety equipment should be tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU). Type of protective equipment should be selected based on concentration amount and conditions of use of this material. Full-face vapor respirator may be required as backup to engineering controls when proper engineering controls are not in place to keep TLV and PEL limits below defined thresholds. Respiratory protection must comply with 29 CFR 1910.134.

Eye/Face-

- Goggles (chemical-resistant), and/or full face shield where splashing is possible.

Skin/Body-

- Gloves (PVC, neoprene, or nitrile).
- Apron or coveralls (chemical-resistant).

Respiratory-

- If the exposure limit is exceeded, a full face piece respirator with an acid gas cartridge may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest.
- For emergencies or instances where the exposure levels are not known, use a full face piece positive-pressure, air-supplied respirator.

General Hygiene Considerations-

- Handle in accordance with good industrial hygiene and safety practice.
- Keep away from foodstuffs, beverages, and feed.
- Wash face, hands, and any exposed skin thoroughly after handling.
- Appropriately dispose of contaminated clothing; wash before re-use, if applicable.
- Avoid contact with eyes, skin, and clothing.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Form: Liquid	Vapor Density: Similar to water
Color: Clear	Relative Density: 8.76 lbs/gal
Odor: Pungent	Specific Gravity: 1.05
pH: <1	Solubility in Water: 100%
Melting/Freezing Point: 32°F	Partition Coefficient (N-Octanol/Water): No data available
Initial Boiling Point and Boiling Range: 212°F	Auto Ignition Temperature: No data available
Flash Point: N/A	Decomposition Temperature: No data available
Evaporation Rate: Similar to water	Viscosity: 2.3 mPa.s at 59°F
Flammability (Solid, Gas): N/A	Volatiles (% By Weight): No data available
Upper/Lower Flammability or Explosive Limits: N/A	Volatile Organic Compounds (VOC's): No data available
Vapor Pressure (Mm Hg): Similar to water	

SECTION 10 - STABILITY AND REACTIVITY

Reactivity: Not reactive under normal and ambient conditions

Chemical Stability: Stable under normal and ambient conditions.

Possibility of Hazardous Reactions: No possibility of hazardous reactions known.

Conditions to Avoid: Incompatibilities, flames, ignition sources.

Incompatible Materials: A strong mineral acid, concentrated Hydrochloric acid is highly reactive with strong bases, metals, metal oxides, hydroxides, amines, carbonates and other alkaline materials. Incompatible with materials such as cyanides, sulfides, sulfites, and Formaldehyde.

Hazardous Decomposition Products: When heated to decomposition, emits toxic Hydrogen Chloride fumes and will react with water or steam to produce heat and toxic and corrosive fumes. Thermal oxidative decomposition produces toxic chlorine fumes and explosive Hydrogen gas.

SECTION 11 - TOXICOLOGICAL INFORMATION

Routes of Entry:	Eyes, skin, ingestion, dermal absorption.
Acute Toxicity:	
Oral Toxicity (LD ₅₀)-	900 mg/kg (Rabbit)
Dermal Toxicity (LD ₅₀)-	No data available
Inhalation Toxicity (LD ₅₀)-	3,124 ppm (1 hr., Rat)
Primary Eye Irritation:	Corrosive. Vapors are irritating and may cause damage to the eyes. Contact may cause severe burns and permanent eye damage.
Primary Skin Irritation:	Can cause redness, pain, and severe skin burns. Concentrated solutions cause deep ulcers and discolor skin.
Sensitization:	None known.
Carcinogenicity:	
IARC-	Group 3
ACGIH-	No component of this product present at levels >=0.1% is identified as a carcinogen or potential carcinogen.
NTP-	No component of this product present at levels >=0.1% is identified as a carcinogen or potential carcinogen.
OSHA-	No component of this product present at levels >= 0.1% is identified as a carcinogen or potential carcinogen.
Reproductive Toxicity:	Investigated as a tumorigenic, mutagen, reproductive effector.
Specific Target Organ Toxicity-Single Exposure:	Respiratory system - Respiratory tract irritant, single exposure, category 3.
Specific Target Organ Toxicity-Repeated Exposure:	No data available.
Aspiration Hazard:	Investigated as a tumorigenic, mutagen, reproductive effector.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:	
Toxicity to Fish-	TLm- <i>Gambusia affinis</i> (Mosquito Fish): 282 mg/l (96 hr.) LD ₁₀₀ - Trout: 10 mg/l (24 hr.)
Toxicity to Daphnia and Other Aquatic Invertebrates-	LD ₅₀ - Shrimp: 100-300 ppm (48 hr.), salt water
Persistence and Degradability:	When released into the soil, this material is not expected to biodegrade.
Bioaccumulation Potential:	No data available.
Mobility in Soil:	When released into the soil, this material may leach into groundwater.
Results of PBT and vPvB Assessment:	Not conducted.
Other Adverse Effects:	US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802. Harmful to aquatic life.

SECTION 13 - DISPOSAL CONSIDERATIONS

Recommendation:	Hazardous wastes shall be managed responsibly. Contact a licensed professional waste disposal service to dispose of this material. Do not allow product to reach the sewage system. Disposal must comply will local, state, and federal regulations. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of an NPDES permit.
Cleansing agent:	Water should be used as a cleansing agent to rinse containers and/or soiled PPE. Treat rinsate water as hazardous waste and dispose of it accordingly.

SECTION 14 - TRANSPORTATION INFORMATION

US DOT

UN Number: 1789
Class: 8
Packing Group: II
Proper Shipping Name: Hydrochloric acid, solution
Poison Inhalation Hazard(s): N/A
Marine Pollutant: No



IMDG

UN Number: 1789
Class: 8
Packing Group: II
EMS-No.: F-A, S-B
Proper Shipping Name: Hydrochloric acid, solution



IATA

UN Number: 1789
Class: 8
Packing Group: II
Proper Shipping Name: Hydrochloric acid, solution



Transport in Bulk (According to Annex II of MARPOL 73/78 and the IBC Code): Not Applicable.

SECTION 15 - REGULATORY INFORMATION

EPA Registration No.: N/A
Cal DPR Registration No.: N/A

<u>Listed Hazardous Chemical</u>	<u>CAS No.</u>	<u>EPCRA EHS</u>		<u>CERCLA HS</u>	<u>CAA 112r</u>	<u>EPCRA 313</u>	<u>Prop 65 Listed</u>
		<u>RQ (lbs)</u>	<u>TPQ (lbs)</u>	<u>RQ (lbs)</u>	<u>TQ (lbs)</u>		
Hydrochloric Acid (<37% conc.)	7647-01-0	N/A	N/A	5000	N/A	N/A	No

Legend

EPCRA- Emergency Planning and Community Right-to-Know Act
 CERCLA- Comprehensive Environmental Response, Compensation and Liability Act
 CAA- Clean Air Act
 RQ- Release Quantity
 TPQ- Threshold Planning Quantity
 EPA- Environmental Protection Agency
 DPR- Department of Pesticide Registration

SECTION 16 - OTHER INFORMATION

NFPA



NFPA Rating Explanation Guide					
RATING NUMBER	HEALTH HAZARD	FLAMMABILITY HAZARD	INSTABILITY HAZARD	RATING SYMBOL	SPECIAL HAZARD
4	Can be lethal	Will vaporize and readily burn at normal temperatures	May explode at normal temperatures and pressures	ALK	Alkaline
3	Can cause serious or permanent injury	Can be ignited under almost all ambient temperatures	May explode at high temperature or shock	ACID	Acidic
2	Can cause temporary incapacitation or residual injury	Must be heated or high ambient temperature to burn	Violent chemical change at high temperatures or pressures	COR	Corrosive
1	Can cause significant irritation	Must be preheated before ignition can occur	Normally stable. High temperatures make unstable	OX	Oxidizing
0	No hazard	Will not burn	Stable	☢	Radioactive
				☹	Reacts violently or explosively with water
				☹OX	Reacts violently or explosively with water and oxidizing

HMIS III

3 HEALTH

0 FLAMMABILITY

1 REACTIVITY

C PERSONAL PROTECTION

PERSONAL PROTECTION INDEX					
A	☒			G	☒ + ☐ + ☹
B	☒ + ☐			H	☒ + ☐ + ☑ + ☹
C	☒ + ☐ + ☑			I	☒ + ☐ + ☹
D	☒ + ☐ + ☑ + ☑			J	☒ + ☐ + ☑ + ☹
E	☒ + ☐ + ☑ + ☑			K	☒ + ☐ + ☑ + ☑ + ☑
F	☒ + ☐ + ☑ + ☑ + ☑			X	Consult your supervisor or S.O.P. for "SPECIAL" handling directions
A	n	o	p	q	r
Safety Glasses	Splash Goggles	Face Shield & Eye Protection	Gloves	Boots	Synthetic Apron
t	u	w	y	z	Additional Information
Dust Respirator	Vapor Respirator	Dust & Vapor Respirator	Full Face Respirator	Airline Hood or Mask	

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