



# Material Safety Data Sheet

## 1. Product and Company Identification

Product name : **Deuterium Chloride**

Chemical formula : DCI

Synonyms : Deuterated hydrochloric acid

Company : Specialty Gases of America, Inc  
6055 Brent Dr.  
Toledo, OH 43611

Telephone : 419-729-7732

Emergency : 800-424-9300

## 2. Composition/Information on Ingredients

Components	CAS Number	% Volume
Deuterium Chloride	7698-05-7	99+%

## 3. Hazards Identification

### Emergency Overview

Poisonous, corrosive high pressure liquid and gas.  
May cause liver damage.  
Can cause eye, skin and respiratory tract burns.

### Potential Health Effects

Inhalation : Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema. Symptoms may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting.

Eye contact : Irritation.

Skin contact : Irritation.

Ingestion : Burns.

Chronic Health Hazard : None known.

## 4. First Aid Measures

Eye contact : Immediately flush eyes, including under the eyelids, gently but thoroughly with plenty of running water for at least 15 minutes.

Skin contact : Immediately flush with copious amounts of water for at least 15 minutes while removing contaminated clothing.

Ingestion : Contact physician immediately. Wash out mouth with water.

Inhalation : Immediately remove victim to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration.

Note to physicians : Symptoms of exposure may be delayed. Treat symptomatically and supportively.

## 5. Fire-Fighting Measures

- Suitable extinguishing media : Use what is appropriate for surrounding fire.
- Specific hazards : Cylinder rupture may occur under fire conditions. Emits toxic fumes under fire conditions.
- Fire fighting : Wear self contained breathing apparatus and full protective clothing. Keep fire exposed cylinders cool with water spray.

## 6. Accidental Release Measures

- Occupational spill/release : Evacuate and ventilate area. Remove leaking cylinder to exhaust hood or safe outdoor area. Cover with dry lime or soda ash, pick up and store in closed containers. Use non-sparking tools.
- Additional advice : None.

## 7. Handling and Storage

### Handling

Secure cylinder when using to protect from falling. Use suitable hand truck to move cylinders. Use only in a well-ventilated area.

### Storage

Store in well ventilated areas. Keep valve protection cap on cylinders when not in use.

## 8. Exposure Controls / Personal Protection

### Engineering measures

Use explosion-proof ventilation equipment.

### Personal protective equipment

- Respiratory protection : Use a self-contained breathing apparatus in case of leakage.
- Hand protection : Impervious gloves.
- Eye protection : Safety glasses. Face shield.
- Skin and body protection : Coveralls, boots, and/or other resistant protective clothing.

## 9. Physical and Chemical Properties

- Form : Liquid or gas.
- Color : Clear.
- Odor : Chlorine-like odor.
- Vapor pressure : 613 psi @ 21.1°C
- Vapor density : 1.3 (air = 1)
- Boiling point : -85°C
- Water solubility : Soluble.
- Specific gravity : > 1 (water = 1)
- Evaporation rate : Not available.

## 10. Stability and Reactivity

- Stability : Stable under normal conditions.

Conditions to avoid : Storage in poorly ventilated areas. Storage near a heat source.  
Materials to avoid : Alkali or alkaline earth metals, aluminum. Bases. Copper, copper alloys.  
Corrodes steel.  
Hazardous decomposition products : Hydrogen chloride.

### 11. Toxicological Information

The components of this material have been reviewed in various sources and the following endpoints are published:

DEUTERIUM : Inhalation LC50 Rat: 3120 ppm/1H  
CHLORIDE (7698-05-7)

### 12. Ecological Information

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

### 13. Disposal Considerations

Waste from residues / unused products : Dispose of non-refillable cylinders in accordance with federal, state and local regulations. Allow gas to vent slowly to atmosphere in an unconfined area or exhaust hood. If the cylinders are refillable type, return cylinders to supplier with any valve outlet plugs or caps secured and valve protection caps in place.  
Contaminated packaging : Return cylinder to supplier.

### 14. Transport Information

#### DOT (US only)

Proper shipping name : Hydrochloric acid  
Class : 8, Packing Group II  
UN/ID No. : UN1789  
Labeling : Corrosive, Poison  
Reportable quantities : 5000 lb.

### 15. Regulatory Information

#### OSHA

Process Safety Management: Material is not listed in appendix A of 29 CFR 1910.119 as highly hazardous chemical.

#### TSCA

Material is not listed in TSCA inventory. This material is provided for experimental or laboratory use only.

#### SARA

The threshold planning quantity for material is 10,000 lbs.

#### Number in Annex 1 of DIR 67/548

Not listed in annex 1.

## 16. Other Information

Prepared by : Specialty Gases of America, Inc.

For additional information, please visit our website at [www.americangasgroup.com](http://www.americangasgroup.com).