



**Chemical Name:** Hydrochloric acid

**Manufacturer:** Fisher Chemicals

**Container size:** 500ml

**Location:** VLA

**Disposal:** Place empty container in trash. Give partial or full container to the safety officer.



# Fisher Scientific

Part of Thermo Fisher Scientific

## Material Safety Data Sheet

Creation Date 24-Aug-2009

Revision Date 31-Oct-2011

Revision Number 2

### 1. PRODUCT AND COMPANY IDENTIFICATION

<b>Product Name</b>	Hydrochloric acid
<b>Cat No.</b>	A142-212; A142P-19; A142P-20; A144-212; A144-212LC; A144-500; A144-500LB; A144-500LC; A144-612GAL; A144C-212; A144C-212EA; A144P-19; A144P-20; A144S-212; A144S-212EA; A144S-500; A144SI-212; A466-1; A466-2; A466-2LC; A466-250; A466-500; A481-212; A481-212LC; S71942SC; S71943; S71943ND; S80038; SA49
<b>Synonyms</b>	Muriatic acid; Hydrogen chloride; HCl (Technical/Certified ACS Plus/Optima/NF/FCC)
<b>Recommended Use</b>	Laboratory chemicals
<b>Company</b> Fisher Scientific One Reagent Lane Fair Lawn, NJ 07410 Tel: (201) 796-7100	<b>Emergency Telephone Number</b> CHEMTREC®, Inside the USA: 800-424-9300 CHEMTREC®, Outside the USA: 001-703-527-3887

### 2. HAZARDS IDENTIFICATION

#### DANGER!

#### Emergency Overview

Causes burns by all exposure routes. May be harmful if inhaled.

**Appearance** Colorless

**Physical State** Liquid

**odor** pungent

**Target Organs** Skin, Respiratory system, Eyes, Gastrointestinal tract (GI), Liver, Kidney, Teeth

#### Potential Health Effects

#### Acute Effects

#### Principle Routes of Exposure

**Eyes**

**Skin**

**Inhalation**

**Ingestion**

Causes burns.

Causes burns. May be harmful in contact with skin.

Causes burns. May be harmful if inhaled.

Causes burns. May be harmful if swallowed.

**Chronic Effects** Experiments have shown reproductive toxicity effects on laboratory animals. May cause adverse liver effects. May cause adverse kidney 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.

See Section 11 for additional Toxicological information.

**Aggravated Medical Conditions** Preexisting eye disorders. Skin disorders.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Haz/Non-haz

Component	CAS-No	Weight %
Water	7732-18-5	62-65
Hydrochloric acid	7647-01-0	35-38

### 4. FIRST AID MEASURES

**Eye Contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

**Skin Contact** Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

**Inhalation** Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Immediate medical attention is required.

**Ingestion** Do not induce vomiting. Call a physician or Poison Control Center immediately.

**Notes to Physician** Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

**Flash Point** No information available.  
**Method** No information available.

**Autoignition Temperature** No information available.

**Explosion Limits**

**Upper** No data available  
**Lower** No data available

**Suitable Extinguishing Media** Substance is nonflammable; use agent most appropriate to extinguish surrounding fire..

**Unsuitable Extinguishing Media** No information available.

**Hazardous Combustion Products** No information available.

**Sensitivity to mechanical impact** No information available.  
**Sensitivity to static discharge** No information available.

#### Specific Hazards Arising from the Chemical

Corrosive Material. Causes burns by all exposure routes. Thermal decomposition can lead to release of irritating gases and vapors.

**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.

**NFPA**                      **Health** 3                      **Flammability** 0                      **Instability** 1                      **Physical hazards** N/A

**6. ACCIDENTAL RELEASE MEASURES**

**Personal Precautions**                      Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Do not get in eyes, on skin, or on clothing.

**Environmental Precautions**                      Should not be released into the environment.

**Methods for Containment and Clean Up**                      Soak up with inert absorbent material. Keep in suitable, closed containers for disposal..

**7. HANDLING AND STORAGE**

**Handling**                      Use only under a chemical fume hood. Wear personal protective equipment. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Do not ingest.

**Storage**                      Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Engineering Measures**                      Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

**Exposure Guidelines**

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Hydrochloric acid	Ceiling: 2 ppm	Ceiling: 5 ppm Ceiling: 7 mg/m <sup>3</sup> (Vacated) Ceiling: 5 ppm (Vacated) Ceiling: 7 mg/m <sup>3</sup>	IDLH: 50 ppm Ceiling: 5 ppm Ceiling: 7 mg/m <sup>3</sup>

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Hydrochloric acid	Ceiling: 5 ppm Ceiling: 7.5 mg/m <sup>3</sup>	Peak: 5 ppm Peak: 7 mg/m <sup>3</sup>	CEV: 2 ppm

**NIOSH IDLH:** *Immediately Dangerous to Life or Health*

**Personal Protective Equipment**

**Eye/face Protection**

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166

**Skin and body protection**

Wear appropriate protective gloves and clothing to prevent skin exposure

**Respiratory Protection**

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State</b>	Liquid
<b>Appearance</b>	Colorless
<b>odor</b>	pungent
<b>Odor Threshold</b>	No information available.
<b>pH</b>	< 1
<b>Vapor Pressure</b>	125 mbar @ 20 °C
<b>Vapor Density</b>	1.27 (Air = 1.0)
<b>Viscosity</b>	1.8 mPa.s @ 15°C
<b>Boiling Point/Range</b>	57°C / 135°F @ 760 mmHg
<b>Melting Point/Range</b>	-35°C / -31°F
<b>Decomposition temperature</b>	No information available.
<b>Flash Point</b>	No information available.
<b>Evaporation Rate</b>	No information available.
<b>Specific Gravity</b>	1.18
<b>Solubility</b>	Soluble in water
<b>log Pow</b>	No data available
<b>Molecular Weight</b>	55.55
<b>Molecular Formula</b>	HCl.H <sub>2</sub> O

## 10. STABILITY AND REACTIVITY

<b>Stability</b>	Stable under normal conditions.
<b>Conditions to Avoid</b>	Incompatible products. Excess heat.
<b>Incompatible Materials</b>	Strong oxidizing agents, Reducing agents, Bases, Metals
<b>Hazardous Decomposition Products</b>	Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Hydrogen chloride gas
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions .</b>	None under normal processing..

## 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity

### Product Information

### Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	4550 mg/k (Rat)	Not listed	Not listed
Hydrochloric acid	700 mg/kg ( Rat )	5010 mg/kg ( Rabbit )	3124 ppm ( Rat ) 1 h

**Irritation** Causes burns by all exposure routes

**Toxicologically Synergistic Products** No information available.

**Chronic Toxicity****Carcinogenicity**

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

Component	ACGIH	IARC	NTP	OSHA	Mexico
Hydrochloric acid	Not listed	group 3	Not listed	Not listed	Not listed

**IARC: (International Agency for Research on Cancer)**

IARC: (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

**Sensitization**

No information available.

**Mutagenic Effects**

Mutagenic effects have occurred in experimental animals.

**Reproductive Effects**

Experiments have shown reproductive toxicity effects on laboratory animals.

**Developmental Effects**

Developmental effects have occurred in experimental animals.

**Teratogenicity**

Teratogenic effects have occurred in experimental animals..

**Other Adverse Effects**

See actual entry in RTECS for complete information.

**Endocrine Disruptor Information**

No information available

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Hydrochloric acid	Not listed	282 mg/L LC50 96 h	Not listed	Not listed

**Persistence and Degradability**

No information available

**Bioaccumulation/ Accumulation**

No information available

**Mobility**

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## 13. DISPOSAL CONSIDERATIONS

**Waste Disposal Methods**

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. TRANSPORT INFORMATION

**14. TRANSPORT INFORMATION**

**DOT**

UN-No UN1789  
 Proper Shipping Name HYDROCHLORIC ACID  
 Hazard Class 8  
 Packing Group II

**TDG**

UN-No UN1789  
 Proper Shipping Name HYDROCHLORIC ACID  
 Hazard Class 8  
 Packing Group II

**IATA**

UN-No UN1789  
 Proper Shipping Name Hydrochloric acid  
 Hazard Class 8  
 Packing Group II

**IMDG/IMO**

UN-No UN1789  
 Proper Shipping Name Hydrochloric acid  
 Hazard Class 8  
 Packing Group II

**15. REGULATORY INFORMATION**

**International Inventories**

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Water	X	X	-	231-791-2	-		X	-	X	X	X
Hydrochloric acid	T	X	-	231-595-7	-		X	X	X	X	X

**Legend:**

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

**U.S. Federal Regulations**

TSCA 12(b) Not applicable

**SARA 313**

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Hydrochloric acid	7647-01-0	35-38	1.0

**SARA 311/312 Hazardous Categorization**

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

**Clean Water Act**

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Hydrochloric acid	X	5000 lb	-	-

**Clean Air Act**

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Hydrochloric acid	X		-

**OSHA**

Component	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Hydrochloric acid	-	TQ: 5000 lb

**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)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Hydrochloric acid	5000 lb	5000 lb

**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**State Right-to-Know**

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Hydrochloric acid	X	X	X	X	X

**U.S. Department of Transportation**

Reportable Quantity (RQ):	Y
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N



**U.S. Department of Homeland Security**

This product contains the following DHS chemicals:

Component	DHS Chemical Facility Anti-Terrorism Standard
Hydrochloric acid	0 lb STQ (anhydrous); 11250 lb STQ (37% concentration or greater)

**Other International Regulations****Mexico - Grade** No information available**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**

D1A Very toxic materials

E Corrosive material



## 16. OTHER INFORMATION

**Prepared By** Regulatory Affairs  
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Email: EMSDS.RA@thermofisher.com

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**Print Date** 31-Oct-2011

**Revision Summary** "\*\*\*\*", and red text indicates revision

**Disclaimer**

The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

**End of MSDS**