# SAFETY DATA SHEET

**Creation Date** 24-Aug-2009 **Revision Date** 23-May-2017 **Revision Number** 4

## 1. Identification

**Product Name** **Hydrochloric acid**

**Cat No. :** **AC124620000; AC124620010; AC124620011; AC124620025; AC124620026; AC124620051; AC124620100; AC124620250**

**Synonyms** Muriatic acid; Hydrogen chloride; HCl

**Recommended Use** Laboratory chemicals.
**Uses advised against** Not for food, drug, pesticide or biocidal product use

**Details of the supplier of the safety data sheet**

**Company**
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

**Emergency Telephone Number**
For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
**CHEMTREC** Tel. No.**US:**001-800-424-9300 / **Europe:**001-703-527-3887

## 2. Hazard(s) identification

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

| | |
|---|---|
| Corrosive to metals | Category 1 |
| Skin Corrosion/irritation | Category 1 B |
| Serious Eye Damage/Eye Irritation | Category 1 |
| Specific target organ toxicity (single exposure) | Category 3 |
| Target Organs - Respiratory system. | |

**Label Elements**

**Signal Word**
Danger

**Hazard Statements**
May be corrosive to metals
Causes severe skin burns and eye damage
May cause respiratory irritation



**Precautionary Statements**
**Prevention**
Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area
Keep only in original container
**Response**
Immediately call a POISON CENTER or doctor/physician
**Inhalation**
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
**Skin**
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
**Eyes**
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
**Ingestion**
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting
**Spills**
Absorb spillage to prevent material damage
**Storage**
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Store in corrosive resistant polypropylene container with a resistant inliner
Store in a dry place
**Disposal**
Dispose of contents/container to an approved waste disposal plant
**Hazards not otherwise classified (HNOC)**
None identified

## 3. Composition / information on ingredients

| 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 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. Immediate medical attention is required.

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

**Most important symptoms/effects** Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

**Notes to Physician** Treat symptomatically

## 5. Fire-fighting measures

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

**Unsuitable Extinguishing Media** No information available

**Flash Point** No information available
**Method -** No information available

**Autoignition Temperature** No information available
**Explosion Limits**
**Upper** No data available
**Lower** No data 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.

**Hazardous Combustion Products**
Hydrogen chloride gas
**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 | Flammability | Instability | Physical hazards |
|---|---|---|---|
| 3 | 0 | 0 | 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. See Section 12 for additional ecological information.

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

## 7. Handling and storage

**Handling** 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

**Exposure Guidelines**

| Component | ACGIH TLV | OSHA PEL | NIOSH IDLH | Mexico OEL (TWA) |
|---|---|---|---|---|
| Hydrochloric acid | Ceiling: 2 ppm | Ceiling: 5 ppm<br>Ceiling: 7 mg/m³<br>(Vacated) Ceiling: 5 ppm<br>(Vacated) Ceiling: 7 mg/m³ | IDLH: 50 ppm<br>Ceiling: 5 ppm<br>Ceiling: 7 mg/m³ | Ceiling: 5 ppm<br>Ceiling: 7 mg/m³ |

*Legend*

*ACGIH - American Conference of Governmental Industrial Hygienists*
*OSHA - Occupational Safety and Health Administration*
*NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health*

**Engineering Measures** Ensure that eyewash stations and safety showers are close to the workstation location.

**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.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

| | |
|---|---|
| **Physical State** | Liquid |
| **Appearance** | Colorless |
| **Odor** | pungent |
| **Odor Threshold** | No information available |
| **pH** | < 1 |
| **Melting Point/Range** | -35 °C / -31 °F |
| **Boiling Point/Range** | 57 °C / 135 °F @ 760 mmHg |
| **Flash Point** | No information available |
| **Evaporation Rate** | No information available |
| **Flammability (solid,gas)** | Not applicable |
| **Flammability or explosive limits** | |
| **Upper** | No data available |
| **Lower** | No data available |
| **Vapor Pressure** | 125 mbar @ 20 °C |
| **Vapor Density** | 1.27 |
| **Specific Gravity** | 1.18 |
| **Solubility** | Soluble in water |
| **Partition coefficient; n-octanol/water** | No data available |
| **Autoignition Temperature** | No information available |
| **Decomposition Temperature** | No information available |
| **Viscosity** | 1.8 mPa.s @ 15°C |
| **Molecular Formula** | HCl.H2O |
| **Molecular Weight** | 36.46 |

## 10. Stability and reactivity

**Reactive Hazard** None known, based on information available

**Stability** Stable under normal conditions.

**Conditions to Avoid** Incompatible products. Excess heat.

**Incompatible Materials** Metals, Strong oxidizing agents, Bases, sodium hypochlorite, Amines, Fluorine, Cyanides, Alkaline

**Hazardous Decomposition Products** Hydrogen chloride gas

**Hazardous Polymerization** Hazardous polymerization does not occur.

**Hazardous Reactions** Contact with metals may evolve flammable hydrogen gas.

## 11. Toxicological information

**Acute Toxicity**

**Product Information**
**Oral LD50** Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.
**Dermal LD50** Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.
**Vapor LC50** Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

**Component Information**

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Water | - | Not listed | Not listed |
| Hydrochloric acid | 238 - 277 mg/kg ( Rat ) | > 5010 mg/kg ( Rabbit ) | 1.68 mg/L ( Rat ) 1 h |

**Toxicologically Synergistic Products** No information available

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

**Irritation** Causes burns by all exposure routes

**Sensitization** No information available

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

| Component | CAS-No | IARC | NTP | ACGIH | OSHA | Mexico |
|---|---|---|---|---|---|---|
| Water | 7732-18-5 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Hydrochloric acid | 7647-01-0 | Not listed | Not listed | 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*

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** Respiratory system
**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects,both acute and delayed** Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

**Ecotoxicity**

Do not empty into drains. Large amounts will affect pH and harm aquatic organisms.

| Component | Freshwater Algae | Freshwater Fish | Microtox | Water Flea |
|---|---|---|---|---|
| Hydrochloric acid | - | 282 mg/L LC50 96 h Gambusia affinis mg/L LC50 48 h Leucscus idus | - | 56mg/L EC50 72h Daphnia |

**Persistence and Degradability** Persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Will likely be mobile in the environment due to its water solubility.

## 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

**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 | IECSC | KECL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Water | X | X | - | 231-791-2 | - | | X | - | X | X | X |
| Hydrochloric acid | X | 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 Hazard Categories**

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

**CWA (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** Occupational Safety and Health Administration
Not applicable

| 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

**U.S. State Right-to-Know Regulations**

| Component | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|---|---|---|---|---|---|
| Water | - | - | X | - | - |
| 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

## 16. Other information

**Prepared By**
Regulatory Affairs
Thermo Fisher Scientific
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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 SDS**