

**1 Identification of the substance/mixture and of the Company/undertaking**

**Product identifier**

**Product name:** Hydrochloric acid, 1.0N Standardized Solution

**Stock number:** 35640

**CAS Number:**  
7647-01-0

**EINECS Number:**  
231-595-7

**Index number:**  
017-002-01-X

**Relevant identified uses of the substance or mixture and uses advised against**  
**Sector of Use** SU24 Scientific research and development

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

**Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company  
Johnson Matthey Catalog Company, Inc.  
30 Bond Street  
Ward Hill, MA 01835-8099  
Emergency Phone: (978) 521-6300  
CHEMTREC: (800) 424-9300  
Web Site: www.alfa.com

**Information Department:** Health, Safety and Environmental Department

**Emergency telephone number:**

During normal hours the Health, Safety and Environmental Department. After normal hours call Chemtrec at (800) 424-9300.

**2 Hazards identification**

**Classification of the substance or mixture**



GHS05 Corrosion

H314 Causes severe skin burns and eye damage.



GHS07

H335 May cause respiratory irritation.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC Not applicable

**Label elements**

**Labelling according to EU guidelines:**

Observe the general safety regulations when handling chemicals

**Safety phrases:**

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

60 This material and its container must be disposed of as hazardous waste.

**Hazard description:**

**WHMIS classification**



**Classification system**

**HMIS ratings (scale 0-4)**

(Hazardous Materials Identification System)

HEALTH	2
FIRE	0
REACTIVITY	1

Health (acute effects) = 2

Flammability = 0

Reactivity = 1

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**Product name:** Hydrochloric acid, 1.0N Standardized Solution

**Other hazards**

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**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

**3 Composition/information on ingredients**

**Chemical characterization: Substances**

**(CAS#) Description:**

Hydrogen chloride (CAS# 7647-01-0): 3.7%

Water (CAS# 7732-18-5): 96.3%

**Identification number(s):**

**EINECS Number:** 231-595-7

**Index number:** 017-002-01-X

**4 First aid measures**

**Description of first aid measures**

**General information** Immediately remove any clothing soiled by the product.

**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

**After skin contact**

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

**After eye contact**

Rinse opened eye for several minutes under running water. Then consult a doctor.

**After swallowing** Seek immediate medical advice.

**5 Firefighting measures**

**Extinguishing media**

**Suitable extinguishing agents**

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

**Special hazards arising from the substance or mixture** Chlorine

**Advice for firefighters**

**Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

**6 Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

**Environmental precautions:**

Do not allow material to be released to the environment without proper governmental permits.

**Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

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 disposal information.

**7 Handling and storage**

**Handling**

**Precautions for safe handling**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

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Information about protection against explosions and fires: The product is not flammable (Contd. of page 2)

Conditions for safe storage, including any incompatibilities

**Storage**

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility:

Aqueous solutions are incompatible with alkali and alkaline earth metals and many reactive organic and inorganic chemicals.

Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

**8 Exposure controls/personal protection**

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters

Components with limit values that require monitoring at the workplace:

Hydrogen chloride

	ppm
ACGIH TLV	5-Ceiling
Austria MAK	5
Belgium	5-STEL
Denmark TWA	5
Finland	5-STEL (skin)
France VLE	5
Germany MAK	5
Hungary	5-STEL
Japan	5-STEL
Korea TLV	5-Ceiling
Norway TWA	5
Poland TWA	5 mg/m <sup>3</sup> ; 10 mg/m <sup>3</sup> -STEL
Russia	5-STEL
Sweden	5-STEL
Switzerland MAK-W	5; 10-KZG-W
United Kingdom TWA	1; 5-STEL
USA PEL	5-Ceiling

Additional information: No data

Exposure controls

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Breathing equipment: Use suitable respirator when high concentrations are present.

Protection of hands:

Impervious gloves

Check protective gloves prior to each use for their proper condition.

Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Eye protection:

Safety glasses

Tightly sealed goggles

Full face protection

Body protection: Protective work clothing.

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**9 Physical and chemical properties**

<b>Information on basic physical and chemical properties</b>	
<b>General Information</b>	
<b>Appearance:</b>	
Form:	Liquid
Color:	Colorless
Odor:	Acidic
Odour threshold:	Not determined.
<b>pH-value:</b>	Not determined.
<b>Change in condition</b>	
Melting point/Melting range:	Not determined
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined
<b>Flash point:</b>	Not determined
<b>Flammability (solid, gaseous)</b>	Not applicable.
<b>Ignition temperature:</b>	Not determined
<b>Decomposition temperature:</b>	Not determined
<b>Auto igniting:</b>	Not determined.
<b>Danger of explosion:</b>	Product does not present an explosion hazard.
<b>Explosion limits:</b>	
Lower:	Not determined
Upper:	Not determined
<b>Vapor pressure:</b>	Not determined
<b>Density:</b>	Not determined
<b>Relative density</b>	Not determined.
<b>Vapour density</b>	Not determined.
<b>Evaporation rate</b>	Not determined.
<b>Solubility in / Miscibility with</b>	
Water:	Fully miscible
<b>Segregation coefficient (n-octanol/water):</b> Not determined.	
<b>Viscosity:</b>	
dynamic:	Not determined.
kinematic:	Not determined.
<b>Other information</b>	No further relevant information available.

**10 Stability and reactivity**

**Reactivity**  
**Chemical stability**  
**Thermal decomposition / conditions to be avoided:**  
Decomposition will not occur if used and stored according to specifications.  
**Possibility of hazardous reactions**  
Reacts with alkali metals.  
Reacts with alkaline earth metals.  
**Incompatible materials:**  
Aqueous solutions are incompatible with alkali and alkaline earth metals and many reactive organic and inorganic chemicals.  
Oxidizing agents  
**Hazardous decomposition products:** Chlorine

**11 Toxicological information**

**Information on toxicological effects**  
**Acute toxicity:**  
**Primary irritant effect:**  
**on the skin:**  
Strong corrosive effect on skin and mucous membranes.  
Irritant to skin and mucous membranes.

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**on the eye:**

Strong corrosive effect.  
Irritating effect.

**Sensitization:** No sensitizing effects known.**Subacute to chronic toxicity:**

Hydrochloric acid is a severe irritant to skin, eyes, and mucous membranes. Vapors may cause severe irritation to the eyes and respiratory tract. Inhalation of vapor may cause pulmonary edema. Dilute solutions have a less irritating effect.

**Subacute to chronic toxicity:**

Corrosive materials are acutely destructive to the respiratory tract, eyes, skin and digestive tract. Eye contact may result in permanent damage and complete vision loss. Inhalation may result in respiratory effects such as inflammation, edema, and chemical pneumonitis. May cause coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Ingestion may cause damage to the mouth, throat and esophagus. May cause skin burns or irritation depending on the severity of the exposure.

**Additional toxicological information:**

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

IARC-3: Not classifiable as to carcinogenicity to humans.

ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.

**12 Ecological information****Toxicity****Acquatic toxicity:** No further relevant information available.**Persistence and degradability** No further relevant information available.**Behavior in environmental systems:****Bioaccumulative potential** No further relevant information available.**Mobility in soil** No further relevant information available.**Additional ecological information:****General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

**Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.**Other adverse effects** No further relevant information available.**13 Disposal considerations****Waste treatment methods****Recommendation** Consult state, local or national regulations to ensure proper disposal.**Uncleaned packagings:****Recommendation:** Disposal must be made according to official regulations.**Recommended cleansing agent:** Water, if necessary with cleansing agents.**14 Transport information****DOT regulations:****Hazard class:**

8

**Identification number:**

UN1789

**Packing group:**

III

**Proper shipping name (technical name):** HYDROCHLORIC ACID

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Label 8

**Land transport ADR/RID (cross-border)**

ADR/RID class: 8 (C1) Corrosive substances  
 Danger code (Kemler): 80  
 UN-Number: 1789  
 Packaging group: III  
 UN proper shipping name: 1789 HYDROCHLORIC ACID

**Maritime transport IMDG:**

IMDG Class: 8  
 UN Number: 1789  
 Label: 8  
 Packaging group: III  
 Marine pollutant: No  
 Segregation groups: Acids  
 Proper shipping name: HYDROCHLORIC ACID

**Air transport ICAO-TI and IATA-DGR:**

ICAO/IATA Class: 8  
 UN/ID Number: 1789  
 Label: 8  
 Packaging group: III  
 Proper shipping name: HYDROCHLORIC ACID

UN "Model Regulation": UN1789, HYDROCHLORIC ACID, 8, III

Special precautions for user Warning: Corrosive substances

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

**15 Regulatory information**

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

Substance is not listed.

**Product related hazard informations:**

Observe the general safety regulations when handling chemicals

**Safety phrases:**

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

60 This material and its container must be disposed of as hazardous waste.

**National regulations**

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

**Information about limitation of use:**

For use only by technically qualified individuals.

This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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**16 Other information**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing MSDS:** Health, Safety and Environmental Department.

**Contact:** Ryan P. Wilson

**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
IMDG: International Maritime Code for Dangerous Goods  
DOT: US Department of Transportation  
IATA: International Air Transport Association  
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)  
ICAO: International Civil Aviation Organization  
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
HMIS: Hazardous Materials Identification System (USA)  
WHMIS: Workplace Hazardous Materials Information System (Canada)

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