

Hydrochloric Acid Solution 2 Molar

Section 1. Identification of Product and Company

1.1 Identification of substance or preparation: Hydrochloric Acid Solution, 2M

Synonyms: Hydrogen chloride, Muriatic acid

1.2 Product Application: This MSDS provides Health and Safety information from any Hydrochloric acid solution component of the following vials or kits:

Altus Science Part Number	Product Name/Description/Range
(K) = Kit A-5950	2 Molar Hydrochloric Acid Solution

1.3 Company/Undertaking Identification:

Altus Science Limited
 Vanguard House
 Sci-Tech Daresbury
 Keckwick Lane
 Daresbury,
 Cheshire,
 WA4 4AB
 United Kingdom
 Telephone: +44 (0) 1925 606528
 Email address: info@altusscience.com

1.4 Emergency Telephone: +44(0) 1925 606 528

Section 2. Hazards Identification

2.1 Hazard Summary:

Classification according to regulation (EC) No 1272/2008

Corrosive to metals (Category 1), H290

Physical hazards: Not classified for physical hazards

Health hazards: Not classified for health hazards

Environmental hazards: Not classified for hazards to the environment

2.2 Label elements:

Contains: Hydrochloric acid, Water

Supplemental label information: Not applicable

2.3 Other hazards: Not assigned

Section 3. Composition/Information on Ingredients

3.1 Mixtures:

Chemical description: Hydrochloric Acid solution

Compound Name	CAS-No.	EC No.	Concentration	CLP Classification - Reg No.
Water	7732-18-5	231-791-2	≥66.8% w/v	Not applicable
Hydrochloric acid	7647-01-0	231-595-7	≤33.2% w/v	Met Corr. 1; Skin Corr. 1B; STOT SE 3; H290, H314, H335

Section 4. First Aid Measures

4.1 Description of first aid measures:

Skin Contact: Remove contaminated clothing and shoes immediately. Wash the skin with plenty of soap and water. Consult a physician.

Eye Contact: Flush eyes with water for at least 15 minutes, before consulting a physician.

Ingestion: DO NOT induce vomiting. If the victim is conscious, rinse the mouth with water. Consult a physician.

Inhalation: If inhaled, move the person into fresh air. If not breathing, provide artificial respiration. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed: Most important known symptoms are described in section 11.

4.3 Indication of any immediate medical attention and special treatment needed: Not available

Section 5. Fire Fighting Measures

5.1 Extinguishing media:

Suitable Extinguishing Media: Water Spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable Extinguishing Media: None

5.2 Special hazards arising from the substance or mixture: Hydrogen Chloride Gas

5.3 Advice for fire-fighters:

Special protective equipment for fire-fighters: Wear self-contained breathing apparatus if necessary.

Special fire-fighting procedures: Not applicable

5.4 Further information: No data available

Section 6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel: Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

For emergency responders: Evacuate personnel to safe areas. Use personal protection recommended in Section 8 of the MSDS

6.2 Environmental precautions: DO NOT allow product into drainage systems.

6.3 Methods and materials for containment and clean up:

- Spills of the product could present a significant slip hazard depending on quantity and surface type
- Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements
- Contain and recover by physical means
- Clean small spills by diluting with sufficient quantities of water
- Soak up with inert absorbent material and dispose of as hazardous waste. Store in suitable, closed containers for disposal.

6.4 Reference to other sections: Please refer to Section 8 for further information. Refer to section 13 for disposal information.

Section 7. Handling and Storage

7.1 Precautions for safe handling: Avoid inhalation of vapour/mist. For further precautions, see section 2.

7.2 Conditions for safe storage, including any incompatibilities: Reasonable and safe chemical storage. Store in a closed container in a well ventilated storage area, away from incompatible materials. Opened containers must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s): For professional and industrial users only.

Section 8. Exposure Controls/Personal Protection

8.1 Control parameters

Occupational exposure limits - UK EH40 Workplace Exposure Limits (WEL's):

Components	Type	Value	Basis
Hydrochloric acid (7647-01-0)	STEL	8mg/m3	UK EH40 WEL
	TWA	2mg/m3	UK EH40 WEL

8.2 Exposure controls:

Biological Limit Values: No biological exposure limits noted for the ingredient(s)

Recommended monitoring procedures: Not available

Environmental exposure controls: Not applicable

Appropriate engineering controls: Handle with good industrial hygiene and safety practice. Always wash hands before breaks and at the end of the working day.

Personal protective equipment:

Eye/face protection: Tight-fitting safety goggles. Minimum of 8-inch Face shield. Use equipment tested and approved under the appropriate government standards (Such as NIOSH (US) or EN 166 (EU))

Skin protection: Only handle with gloves. Gloves must be inspected prior to each use, and must satisfy specifications of EU directive 89/686/EEC and standard EN 374. Be sure to use proper glove removal technique (without touching gloves exterior surface) to avoid skin contact. Dispose of contaminated gloves in accordance with applicable laws and good laboratory practice. Wash and dry hands.

Body protection: Type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the workplace. Complete suit protecting against chemicals.

Respiratory protection: Where air-purifying respirators are appropriate, use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as backup to engineering controls. If respirator is sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under the appropriate government standards (Such as NIOSH (US) or CEN (EU)).

Control of Environmental exposure: Don't let product enter drains.

Section 9. Physical and Chemical Properties

9.1 Physical and Chemical Properties:

Characteristic	Description
Appearance	<i>Physical State</i>
	<i>Colour</i>
Odour	None
Odour Threshold	Not available
pH (Concentrated product)	6.5
Melting point/freezing point	0°C
Initial boiling point and boiling range	100°C
Flash point	>100°C Pensky Martens (CC)
Evaporation rate	1 (Water=1)
Flammability (solid, gas)	Not available
Flammable Limit - lower	Not available
Flammable Limit - upper	Not available
Vapour pressure	18mm Hg at 21°C
Vapour density	1
Relative density	1
Water solubility	Completely soluble
Partition coefficient (n-Octanol/water)	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Explosive properties	Not applicable
Oxidizing properties	Not applicable

9.2 Other safety information: No relevant additional information available

Section 10. Stability and Reactivity

- 10.1 Reactivity:** Not available
- 10.2 Chemical Stability:** Material is stable under normal conditions
- 10.3 Possibility of hazardous reactions:** Hazardous polymerisation does not occur
- 10.4 Conditions to avoid:** No special requirement
- 10.5 Incompatible materials:** Bases, Amines, Alkali metals, Metals
- 10.6 Hazardous decomposition products:** None known. In event of a fire, see section 5.
-

Section 11. Toxicological Information

11.1 Information on toxicological effects:

Acute toxicity: Not classified

Skin corrosion/irritation: Not classified

Serious eye damage/eye irritation: Not classified

Respiratory or skin sensitisation: Not classified

Germ cell mutagenicity: Not classified

Carcinogenicity: IARC: Group 3: Not classified due to its carcinogenicity to humans

Reproductive toxicity: Not classified

Information on likely routes of exposure:

Ingestion: None known

Inhalation: Not expected to cause respiratory effects

Skin contact: Prolonged or repeated contact may cause transient irritation
Repeated exposure may cause skin dryness or cracking

Eye contact: Prolonged or repeated contact may cause transient irritation

Signs and symptoms of Exposure: Not available

Mixture versus substance information: Not available

Additional information: Aspiration or inhalation may cause chemical pneumonitis, spasm, inflammation and edema of the bronchi and/or larynx, pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting.

Section 12. Ecological Information

- 12.1 Toxicity:** No data available
- 12.2 Persistence and degradability:** No data available
- 12.3 Bio accumulative potential:** Not available
- 12.4 Mobility in soil:** Not available
- 12.5 Results of PBT and vPvB assessment:** Not available
- 12.6 Other adverse effects:** Not available
- 12.7 Summary:** The product is not classified as dangerous for the environment. The evaluation of the environmental hazards is based on the concentration limits set out in directive 1999/45/EC
-

Section 13. Disposal Considerations

13.1 Waste treatment methods:

Product:

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging:

Dispose of as unused product

Section 14. Transport Information

14.1 UN Number: **ADR/RID:** 1789 **IMDG:**1789 **IATA:** 1789

14.2 UN Proper Shipping Name: HYDROCHLORIC ACID

14.3 Transport hazard class(es): 8

14.4 Packaging Group: **ADR/RID:** III **IMDG:**III **IATA:** III

14.5 Environmental Hazards: no

14.6 Special precautions for user: No data available

Section 15. Regulatory Information

15.1 Safety, health and environment regulations/legislation specific for the substance or mixture: No data available

15.2 Chemical safety assessment: No data available

15.3 Other regulations: This datasheet complies with the requirements of Regulation (EC) No. 1907/2006

Section 16. Other Information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on present state of knowledge and is applicable to the product with regard to appropriate safety precautions. Altus Science Ltd shall not be held liable for any damage resulting from handling or from contact with the above product. Please refer to Terms and Conditions for further information of sale.

Abbreviations

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

RID - International Rule for Transport of Dangerous Substances by Railway

ADN - International Carriage of Dangerous Goods by Inland Navigation

IATA - International Air transport Association

IMDG - International Maritime Dangerous Goods Code

WEL - Workplace Exposure Limit

TWA - Time weighted Average

STEL - Short-term Exposure Limit

vPvB - Very persistent, very Bio accumulative

LC50 - Lethal Concentration 50%

H314 - Causes severe skin burns and eye damage

H335 - May cause respiratory irritation

H290 - May be corrosive to metals

w/v – Weight by volume