

## Hydrochloric Acid Solution (Conductivity Standard)

### Section 1. Identification of Product and Company

**1.1 Identification of substance or preparation:** Hydrochloric Acid Solution (Conductivity Standard)

**Synonyms:** Hydrogen chloride, Muriatic acid

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

Altus Science Part Number	Product Name/Description/Range
(K) = Kit A-3410, A-3411(K), A-3501(K), A-3502(K), A-3507	Conductivity Standard, 25 $\mu$ S from Hydrochloric Acid

**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:**

**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	$\geq$ 99.999%	Not applicable
Hydrochloric acid	7647-01-0	231-595-7	$\leq$ 0.10%	Skin Corr. 1B;H314. STOT E 3;H335

## Section 4. First Aid Measures

- 4.1 Description of first aid measures:**  
**Skin Contact:** Wash skin with plenty of soap and water  
**Eye Contact:** Flush eyes with water as a precaution  
**Ingestion:** If the victim is conscious, give 1-2 glasses of water  
**Inhalation:** No treatment required
- 4.2 Most important symptoms and effects, both acute and delayed:** Not applicable
- 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:** This product does not represent a fire hazard since it contains a significant proportion of water  
**Unsuitable Extinguishing Media:** None
- 5.2 Special hazards arising from the substance or mixture:** None known
- 5.3 Advice for fire-fighters:**  
**Special protective equipment for fire-fighters:** No special protective equipment required  
**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:** Not required  
**For emergency responders:** Use personal protection recommended in Section 8 of the MSDS
- 6.2 Environmental precautions:** No special environmental precautions required
- 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
- 6.4 Reference to other sections:** Please refer to Section 8 for further information

## Section 7. Handling and Storage

- 7.1 Precautions for safe handling:** No special requirements
- 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
- 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	Form
Hydrochloric acid (7647-01-0)	STEL	8mg/m <sup>3</sup>	Gas and aerosol mists
	TWA	2mg/m <sup>3</sup>	Gas and aerosol mists

### 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:** None recommended

**Personal protective equipment:**

**Eye/face protection:** Safety goggles

**Skin protection:** No special protective equipment required

**Body protection:** None required

**Respiratory protection:** Not required

## Section 9. Physical and Chemical Properties

### 9.1 Physical and Chemical Properties:

Characteristic		Description
Appearance	<i>Physical State</i>	Liquid
	<i>Colour</i>	Colourless
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  
available

**Other safety information:** No relevant additional information

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## 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:** None known
- 10.6 **Hazardous decomposition products:** None known

## Section 11. Toxicological Information

### 11.1 Information on toxicological effects:

Product/Component	LD50 Oral	LD50 Dermal
Hydrochloric Acid Solution (Mixture)	Rat:>5000mg/kg	Rabbit:>5000mg/kg
Hydrochloric acid (7647-01-0)	Rabbit: 900mg/kg	Mouse: 1449mg/kg

**Acute toxicity:** Not classified

**Skin corrosion/irritation:** Not classified

**Respiratory or skin sensitisation:** Not classified

**Germ cell mutagenicity:** Not classified

**Carcinogenicity:** Not classified

**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:** Not available

## Section 12. Ecological Information

### 12.1 Toxicity:

Components	Test results
Hydrochloric acid (7647-01-0)	LC50 Western mosquitofish: 282mg/l 96 hours

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 - According to Controlled Waste Regulations:**

European Waste Code (EWC) recommendation: 16 03 06

16 Wastes not otherwise specified in the list

16 03 Off-specification batches and unused products

16 03 04 Inorganic wastes

Depending on the origin and state of waster, other EWC numbers may be applicable too

**Contaminated packaging - According to Controlled Waste Regulations:**

European Waste Code (EWC) recommendation: 15 01 02

15 Waste packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified

15 01 Packaging (including separately collected municipal packaging waste)

15 01 02 Plastic packaging

15 01 06 Glass packaging

Depending on the origin and state of the waste, other EWC numbers may be applicable too

## Section 14. Transport Information

**14.1 ADR:** Not regulated as dangerous goods

**14.2 RID:** Not regulated as dangerous goods

**14.3 ADN:** Not regulated as dangerous goods

**14.4 IATA:** Not regulated as dangerous goods

**14.5 IMDG:** Not regulated as dangerous goods

**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 product does not need to be labelled in accordance with EC directives or respective national laws.

## 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