BBC Biochemical MATERIAL SAFETY DATA SHEET

Section 1. Chemical Product and Company Information

Common Name:	**Hydrochloric Acid 31.5%**	**Code:**	**8570, 8573, 8575**
Supplier:	**BBC Biochemical PO Box 1320 409 Eleanor Lane Mount Vernon, WA 98273 1-800-635-4477**	**MSDS#:**	**RW0049**
Synonym:	**Muratic Acid, Aqueous Hydrogen Chloride, HCl**	**Validation Date:**	**3-27-09**
Trade Name:	**Not available**	**Print Date:**	**3-27-09**
Material Uses:	**Chemical Processing/Metal Cleaning**	**Responsible Name:**	**Dr. B**
Manufacturer:	**Univar USA Inc. 6100 Carillon Point Kirkland, WA 98033 425-889-3400**	**In Case of Emergency:**	**1-800-424-9300 Chemtrec USA 1-202-483-7616 Chemtrec Intrl 1-800-635-4477**

Section 2. Composition and Information on Ingredients

Name	CAS#	% by Weight	OSHA PEL	ACGIH TWA
1) Water	7732-18-5	64-91	Not established	
2) Hydrochloric Acid	7647-01-0	9-36	5ppm	

Section 3. Hazards Identification

Physical State and Appearance	Clear to light amber liquid with a pungent odor.
Emergency Overview	Harmful by inhalation. Harmful if swallowed. Causes severe burns. Possible sensitizer. Target organs: Liver, Kidneys.
Routes of Entry	Not available.
Potential Acute Health Effects	
Eyes	Corrosive liquid is will cause severe damage to the eyes. High vapor concentrations may also be irritating.
Skin	Corrosive liquid will cause irritation with itching and local redness. Blisters and tissue destruction may occur.
Inhalation	Corrosive liquid will cause irritation and inflammation to mucous membranes. Dizziness may occur.
Ingestion	Corrosive liquid is toxic. May cause headaches, dizziness, nausea and general weakness. Corrosive liquids will cause internal chemical burns in mouth, esophagus and stomach.
Potential Chronic Health Effects	
Medical Conditions Aggravated by Overexposure	Preexisting eye, skin and respiratory disorders may be aggravated by exposure to this product. Impaired function from preexisting disorders may be aggravated by exposure to this product.
Overexposure/ Signs/Symptoms	Aspiration pneumontis may be evidenced by coughing, labored breathing and cyanosis (bluish skin). In severe cases death may result.

Section 4. First Aid Measures

Eye Contact	Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Get medical attention.
Skin Contact	Remove contaminated clothing/shoes. Flush skin with water. If irritation occurs, get medical attention. Do not reuse clothing until cleaned.
Inhalation	Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Get medical attention.
Ingestion	Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Get medical attention.
Notes to Physician	Not available.

Section 5. Fire Fighting Measures

Flammability of the Product	Not flammable.
Auto-ignition Temperature	Not available
Flash Points	Not available
Flammable Limits	Not available

Products of Combustion	Not available.
Fire Hazards in Presence Of Various Substances	Not available.
Explosion Hazards in Presence of Various Substances	Not available.
Fire Fighting Media and Instructions	Use water fog, "alcohol" foam, dry chemical, or CO2. Clear fire area of unprotected personnel. Do not enter confined fire space without full bunker gear, including positive pressure NIOSH approved SCBA. Cool fire exposed containers with water.
Protective Clothing (Fire)	
Special Remarks on Fire Hazards	Fine mist or spray may be flammable at temperatures below the flash point. Carbon monoxide and unidentified organic compounds may be formed during combustion.
Special Remarks on Explosion Hazards	At high temperatures this product can decompose to give off hydrochloric acid and gas.

Section 6. Accidental Release Measures

Small Spill and Leak	Ventilate area of leak or spill. Remove all sources of ignition. Clean-up personnel require protective clothing and respiratory protection from vapors. Only specially trained or qualified personnel should handle the emergency. Soak up spill and neutralize with soda ash, place in closed containers, lable and store in a safe place outdoors to await proper disposal. Spills on areas other than pavement, e.g. dirt or sand, may be handled by removing the affected soils and placing in approved containers.
Large Spill and Leak	Large spills should be removed by a vacuum truck.

Section 7, Handling and Storage

Handling	Empty containers retain product residue and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition.
Storage	Keep away from heat, sparks, and flame. Surfaces that are hot may ignite liquid product even in the absence of sparks or flame. Store in a cool, ventilated area away from incompatible materials.

Section 8. Exposure Controls / Personal Protection

Engineering Controls	Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Provide exhaust ventilation sufficient to keep the airborne concentration of this product below its exposure limits. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination. Do not add water directly to this product and do not mix with alkalies such as sodium hydroxide (caustic soda) or alkali metals to avoid possible violent reactions. This product may be added to water with mixing and dilution.
Personal Protection	
Eyes	Use chemical safety goggles and/or full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work areas.
Body	Where splashing is possible, full chemically resistant protective clothing (e.g., acid suit) and boots are required.
Respiratory	If exposure may or does exceed occupational exposure limits (Sec. 2) use a NIOSH approved respirator to prevent overexposure. In accord with 29 CFR 1910.134 use either an atmosphere-supplying respirator or an air-purifying respirator for organic vapors.
Hands	Test data indicate the best protection is provided by neoprene, nitrile, and natural rubber gloves.
Feet	Impervious footwear is required in areas where splashing is possible.
Personal Protection in Case of a Large Spill	See above.

Product Name	**Exposure Limits**
1)Hydrochloric Acid CAS 7647-01-0	OSHA PEL 5ppm TWA
2)	
3)	

Consult Local authorities before acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical State and Appearance	Clear to light amber liquid with a pungent odor.	**Odor:**	Pungent
Molecular Weight	36.46	**Taste:**	Not available
Molecular Formula	HCl	**Color:**	Clear to light amber.
pH (1%/Water)	Not available		
Boiling/Condensation Point	140 to 221 deg F		
Melting/Freezing Point	-29 to 5 deg F		
Critical Temperature	Not applicable.		

Specific Gravity	1.05 to 1.18
Vapor Pressure	14.6 to 80
Vapor Density	1.3 @ 20 C
Volatility	Not available
Odor Threshold	Not applicable.
Evaporation Rate	Not available
VOC	Not available.
Viscosity	Not available.
Ionicity (in water)	Not available.
Dispersion Properties	Not available.
Solubility	Not available
Physical Chemical Comments	Not available.

Section 10. Stability and Reactivity

Stability and Reactivity	Stable.
Conditions of Instability	Stable under normal conditions. Avoid heat, flame, and other sources of ignition. Protect from moisture, hygroscopic. Reacts with water, alkalis and metals.
Incompatibility with Various Substances	Avoid strong oxidizing agents, strong bases, metals..
Hazardous Decomposition Products	Carbon monoxide and unidentified organic compounds may be formed during combustion. Generates toxic and irritating gases at high temperatures. Reacts with metals with the evolution of hydrogen which when mixed in air may result in fire or explosion if ignited. Chlorine gas may be released by mixing with strong oxidizers.
Hazardous Polymerization	Will not occur.

Section 11. Toxicological Information

Toxicity to Animals	CAS 7647-01-0 Hydrochloric Acid LD50: oral, rabbit: 900 mg/kg LC50: inhalation rat: 3124 ppm, 1 hour.
Chronic Effects on Humans	Not available.
Other Toxic Effects on Humans	
Special Remarks on Toxicity to Animals	Not available.
Special Remarks on Chronic Effects on Humans	Not available.
Special Remarks on Other Toxic Effects on Humans	Not available.

Section 12. Ecological Information

Ecotoxicity	CAS 7647-01-0 Hydrochloric Acid Fish: LC50 (96 Hr) Mosquito Fish: 282 mg/L LC100(24Hr) Trout: 10 mg/L Invertebrates: LC50(48Hr) Starfish: 100-330 mg/L LC50 (48Hr) Shrimp: 100-330 mg/L
BODS and COD	Not available.
Biodegradable/OEDC	Not available.
Mobility	Not available.
Toxicity of the Products of Biodegradation	Not available.
Special Remarks on The Products of Biodegradation	Hydrochloric Acid can be acutely toxic in aquatic life through reduction in aqueous pH to toxic levels. Typically most aquatic species are intolerant of pH levels lower than 5.5 for any extended length of time. Reduction in aqueous pH levels may also cause the liberation of metals such as aluminum which will also contribute to exhibited toxicity. Hydrochloric acid will dissociate in water and undergo neutralization with carbonate and other naturally occurring buffering agents. Terrestrial organisms would be subject to severe burns if exposed to HCl during an accidental release. A large HCl release could lead to a persistent reduction in pH in a poorly buffered system lacking in carbonates or other naturally occurring acid neitralizers. Care should be taken to avoid accidental release to aquatic or terrestrial ecosystems.

Section 13. Disposal Considerations

Waste Information	The materials resulting from clean up operations may be hazardous wastes and is therefore subject to specific regulations.
Waste Stream	Not available.

Consult your local or regional authorities.

Section 14. Transport Information

DOT Classification	Hydrchloric acid solution; Class 8; UN1789, Packing Group II
Marine Pollutant	Not available.
Hazardous Substances Reportable Quantity	Not available.
Special Provisions for Transport	Not applicable.
TDG Classification	Hydrchloric acid solution; Class 8; UN1789, Packing Group II
ADR/RID Classification	ADR (Europe) Information not available.
IMO/IMDG Classification	IMDG Information not available.
ICAO/IATA Classification	See IATA Regulations Hydrchloric acid solution; Class 8; UN1789, Packing Group II

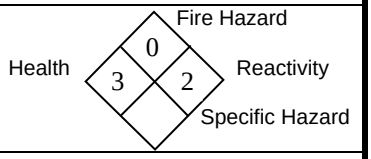
Section 15. Other Information

Label requirements

Hazardous Material Information System (U.S.A.)

Health	3
Fire Hazard	0
Reactivity	2
Personal Protection	

National Fire Protection Association (U.S.A.)



References

Other Special Considerations

Notice to Reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.