








Material Safety Data Sheet

| WHMIS (Pictograms) | WHMIS (Classification) | Personal Protective Equipment |
|---|--|---|
|   | Class D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). Class E: Corrosive liquid. |    |

Section 1. Product and Company Identification

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|---------------------------|---|--------------------------------|--|
| Product Name / Trade name | Muriatic Acid | Associated Product's Item Code | WIP-12280 |
| Synonym | Hydrochloric acid | CAS # | 7647-01-0 |
| Chemical Family | Inorganic acid. | Validation Date | 7/8/2004. |
| Chemical Formula | HCl (aq) | Print Date | 7/8/2004. |
| Manufacturer | Recochem Inc. 850 Montee de Liesse Montreal, Quebec 514-341-3550 | In Case of Emergency | Recochem Inc. Communications and Regulatory Affairs Department (905) 791-1788 |
| Material Uses | Consumer products: Cleaning solution. | | |

Section 2. Hazardous Ingredients

| Name | CAS # | % by Weight | Exposure Limits | |
|-------------------|-----------|--------------------|-------------------------|------------------------------|
| | | | Canadian Values (ACGIH) | U.S. Values (OSHA) |
| Hydrochloric acid | 7647-01-0 | 31-32% / 20° Baume | | Muriatic Acid Not available. |

Section 3. Hazard Identification

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| Emergency Overview | DANGER! CAUSES SEVERE EYE AND SKIN BURNS. MAY BE FATAL IF SWALLOWED. Do not get in eyes, on skin or on clothing. Do not ingest. Do not breathe vapor or mist. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. |
| Potential Acute Health Effects | See Section #11: "Toxicological Information" for further human health effects. Very dangerous in case of skin contact (corrosive, irritant, permeator), of eye contact (irritant), of inhalation. Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. |
| Note to Physician | Not available. |

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Section 4. First Aid Measures

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| Eye Contact | IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. SEEK IMMEDIATE MEDICAL ATTENTION. |
| Skin Contact | If the chemical got onto the clothed portion of the body, remove the contaminated clothes as quickly as possible. Place the victim under a deluge shower. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Seek medical attention. Wash contaminated clothing before reusing. |
| Inhalation | Allow the victim to rest in a well ventilated area. Seek medical attention. |
| Ingestion | DO NOT induce vomiting. Have conscious person drink several glasses of water or milk. Seek medical attention. |

Section 5. Fire Fighting Measures

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| Products of Combustion | Not applicable. |
| Fire Fighting Media and Instructions | Use DRY chemicals, CO2, water spray or foam. |
| Fire Hazards | Flammable hydrogen gas may be produced on prolonged contact with metals. |
| Explosion Hazards | Flammable hydrogen gas may be produced on prolonged contact with metals. |

Section 6. Accidental Release Measures

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| Small Spill and Leak | Dilute with water and mop up, or absorb with an inert DRY material and place in an appropriate waste disposal container. If necessary: Neutralize the residue with a dilute solution of sodium carbonate. |
| Large Spill and Leak | Corrosive liquid. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Place in appropriate container and dispose of in accordance with regional regulations. Neutralize the residue with a dilute solution of sodium carbonate. |

Section 7. Handling and Storage

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| Handling | Not available. |
| Storage | See Section #10 for applicable incompatible materials. May corrode metallic surfaces. Store in a polyethylene container. Keep away from incompatibles. Keep container tightly closed in a cool, well-ventilated place. |

Section 8. Exposure Controls, Personal Protection

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| Engineering Controls | Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location. |
| Personal Protection | |
| <i>Eyes</i> | Face shield. |
| <i>Body</i> | Synthetic apron. |
| <i>Respiratory</i> | Wear appropriate respirator when ventilation is inadequate. |
| <i>Hands</i> | Impervious gloves. |

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Section 9. Physical and Chemical Properties

| | | | |
|---|----------------------|-------------------------|----------------------------------|
| Physical State and Appearance | Liquid. | Odour | Irritant. |
| Molecular Weight | Not applicable. | Taste | Not available. |
| pH (1% Soln/Water) | 1 [Acidic.] | Colour | Clear colorless to light yellow. |
| Boiling/Condensation Point | >81°C (177.8°F) | Volatility | Not available. |
| Melting/Freezing Point | Not available. | Evaporation Rate | Not available. |
| Specific Gravity | 1.16 (Water = 1) | Odour Threshold | Not available. |
| Vapour Pressure | 25 mm of Hg (@ 20°C) | Viscosity | Not available. |
| Vapour Density | Not available. | Solubility | Soluble in water, methanol. |
| VOC Content | Not available. | Other Properties | Not available. |
| The Product is: | Non-flammable. | | |
| Auto-ignition Temperature | Not applicable. | | |
| Flash Point | Not applicable. | | |
| Flammable Limits | Not applicable. | | |
| Fire Hazards in Presence of Various Substances | Not applicable. | | |

Section 10. Stability and Reactivity

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| Stability | The product is stable. |
| Conditions of Instability | No additional remark. |
| Incompatibility with Various Substances | Reactive with oxidizing agents, metals, alkalis. |

Section 11. Toxicological Information

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|--------------------------------|---|
| Routes of Entry | Skin contact. Eye contact. Inhalation. Ingestion. |
| Toxicity to Animals | Acute oral toxicity (LD50): 900 mg/kg [Rabbit]. (Hydrochloric acid). |
| Acute Effects on Humans | |
| <i>Eyes</i> | Very hazardous in case of eye contact (irritant). Corrosive to eyes. Inflammation of the eye is characterized by redness, watering, and itching. |
| <i>Skin</i> | Very hazardous in case of skin contact (corrosive, irritant). Skin contact may produce burns. Severe over-exposure can result in death. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. |
| <i>Inhalation</i> | Very hazardous in case of inhalation. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Over-exposure by inhalation may cause respiratory irritation. May be fatal if inhaled. |

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Ingestion May be fatal if swallowed. May cause burns to mouth, throat and stomach.

Chronic Effects on Humans

CARCINOGENIC EFFECTS: Classified NONE.

MUTAGENIC EFFECTS: Not available.

TERATOGENIC EFFECTS: Not available.

DEVELOPMENTAL TOXICITY: Not available.

Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 12. Ecological Information

Ecotoxicity

For accidental discharges into environment, see Section #6: "Accidental Release Measures" for suggested instructions.

Not available.

Section 13. Disposal Considerations

Waste Information

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14. Transport Information

Canada Transportation of Dangerous Goods (TDG) Information

Primary Class Class 8: Corrosive material

Subsidiary Class (if applicable) -

Proper shipping name hydrochloric acid

Hazard Identification Number 1789

Packing Group II

Special Provisions In containers of 1 L (1Kg) capacity or less this product is classified as a "Limited Quantities" "Consumer Commodity" under TDG regulations.



International Maritime Dangerous Goods (IMDG) Transportation Information

Primary Class Class 8: Corrosive material

Subsidiary Class (if applicable) -

Proper shipping name Hydrochloric acid

Hazard Identification Number 1789

Packing Group II

Marine Pollutant Not pollutant.

Special Provisions -



No placard (handling and hazard label) required.

United States Department of Transportation (DOT) Information

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Primary Class Class 8: Corrosive material

Subsidiary class (if applicable) -

Proper shipping name hydrochloric acid

Hazard Identification Number 1789

Packing Group II

Special Provisions In containers of 1 L (1Kg) this product is qualified as a "consumer commodity" ORM-D under DOT



International Air Transport Association (IATA) For air shipment classification and associated regulations, please refer to the latest edition of IATA Dangerous Goods Regulations.

Section 15. Other Regulatory Information and Pictograms

WHMIS Classification (Canada) Class D-1A: Material causing immediate and serious toxic effects (VERY TOXIC).
Class E: Corrosive liquid.

Canada Domestic Substances List (DSL) Status This product and/ or all of its components are on the DSL.



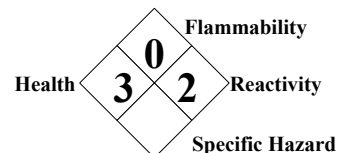
HCS Classification (U.S.A.) Corrosive Material

U.S.A. Regulatory Lists This product and/ or all of its components are on the TSCA inventory list.

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

| | |
|---------------------|---|
| Health | 3 |
| Flammability | 0 |
| Reactivity | 2 |
| Personal Protection | D |

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



Section 16. Other Information

Validated and verified by Compliance and Technical Information Manager on 7/8/2004.

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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. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

MSDS are available at www.recochem.com