Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Common Name/Trade Name: Buffer Solution, pH 1.07

Manufacturer: SPECTRUM LABORATORY PRODUCTS INC.
14422 S. SAN PEDRO STREET
GARDENA, CA 90248

Commercial Name(s): Not available.

Chemical Name: Not applicable.

Chemical Family: Acid.

Chemical Formula: Not applicable.

Supplier: SPECTRUM LABORATORY PRODUCTS INC.
14422 S. SAN PEDRO STREET
GARDENA, CA 90248

Section 2. Composition and Information on Ingredients

Exposure Limits

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS #</th>
<th>TWA (mg/m³)</th>
<th>STEL (mg/m³)</th>
<th>CEIL (mg/m³)</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Potassium chloride</td>
<td>7447-40-7</td>
<td></td>
<td></td>
<td>5</td>
<td>0.373</td>
</tr>
<tr>
<td>2) Water</td>
<td>7732-18-5</td>
<td></td>
<td></td>
<td>5</td>
<td>99.22</td>
</tr>
<tr>
<td>3) Hydrogen chloride</td>
<td>7647-01-0</td>
<td></td>
<td></td>
<td>5</td>
<td>0.41</td>
</tr>
</tbody>
</table>

Toxicological Data on Ingredients:

Hydrogen chloride:
- GAS (LC50): Acute: 4701 ppm 0.5 hours [Rat].

Potassium chloride:
- ORAL (LD50): Acute: 2500 mg/kg [Guinea pig]. 2600 mg/kg [Rat]. 1500 mg/kg [Mouse].

Section 3. Hazards Identification

Potential Acute Health Effects:
Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion. Slightly hazardous in case of skin contact (corrosive, penetrator), of eye contact (corrosive), of inhalation.

Potential Chronic Health Effects:
- CARCINOGENIC EFFECTS: Classified 3 (Not classifiable for human.) by IARC [Hydrogen chloride].
- MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. [Potassium chloride]. Mutagenic for bacteria and/or yeast. [Potassium chloride].
- TERATOGENIC EFFECTS: Not available.
- DEVELOPMENTAL TOXICITY: Not available.

The substance may be toxic to blood, cardiovascular system, upper respiratory tract, skin, eyes, teeth. Repeated or prolonged exposure to the substance can produce target organs damage.

Continued on Next Page
### Section 4. First Aid Measures

| Eye Contact | Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention. |
| Skin Contact | In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention. |
| Serious Skin Contact | Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention. |
| Inhalation | If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. |
| Serious Inhalation | Not available. |
| Ingestion | Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband. |
| Serious Ingestion | Not available. |

### Section 5. Fire and Explosion Data

| Flammability of the Product | Non-flammable. |
| Auto-Ignition Temperature | Not applicable. |
| Flash Points | Not applicable. |
| Flammable Limits | Not applicable. |
| Products of Combustion | Not available. |
| Fire Hazards in Presence of Various Substances | Not applicable. |
| Explosion Hazards in Presence of Various Substances | Non-explosive in presence of open flames and sparks, of shocks. |
| Fire Fighting Media and Instructions | Not applicable. |
| Special Remarks on Fire Hazards | May react with metals to release flammable Hydrogen gas. |
| Special Remarks on Explosion Hazards | May result in explosion with potassium permanganate and sulfuric acid. (Potassium chloride) |

### Section 6. Accidental Release Measures

| Small Spill | 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.** Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements. |
| Large Spill | Absorb with an inert material and put the spilled material in an appropriate waste disposal. **Neutralize the residue with a dilute solution of sodium carbonate.** Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities. |

Continued on Next Page
**Section 7. Handling and Storage**

<table>
<thead>
<tr>
<th>Precautions</th>
<th>Keep locked up. Keep container dry. Do not breathe gas/fumes/vapor/spray. Never add water to this product. If you feel unwell, seek medical attention and show the label when possible. Avoid contact with skin and eyes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage</td>
<td>Keep container tightly closed. Keep container in a cool, well-ventilated area.</td>
</tr>
</tbody>
</table>

**Section 8. Exposure Controls/Personal Protection**

<table>
<thead>
<tr>
<th>Engineering Controls</th>
<th>Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Protection</td>
<td>Splash goggles. Lab coat. Gloves. Respiratory protection is not necessary for normal handling. Normal room ventilation is adequate. Use a vapor respirator if handling of material generates mist or vapor.</td>
</tr>
<tr>
<td>Personal Protection in Case of a Large Spill</td>
<td>Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.</td>
</tr>
</tbody>
</table>

**Exposure Limits**

- **Hydrogen chloride**
  - STEL: 7.5 (mg/m³) from ACGIH (TLV) [United States]
  - STEL: 5 (ppm) from ACGIH (TLV) [United States]
  - CEIL: 5 (ppm) from NIOSH
  - CEIL: 7.5 (mg/m³) from NIOSH
  - CEIL: 5 (ppm) from OSHA (PEL) [United States]
  - CEIL: 7 (mg/m³) from OSHA (PEL) [United States]

Consult local authorities for acceptable exposure limits.

**Section 9. Physical and Chemical Properties**

<table>
<thead>
<tr>
<th>Physical state and appearance</th>
<th>Liquid.</th>
<th>Odor</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular Weight</td>
<td>Not applicable.</td>
<td>Taste</td>
<td>Acid.</td>
</tr>
<tr>
<td>pH (1% soln/water)</td>
<td>Not applicable.</td>
<td>Color</td>
<td>Clear Colorless.</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>The lowest known value is 100°C (212°F) (Water).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical Temperature</td>
<td>Not available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>The only known value is 1 (Water = 1) (Water).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>The highest known value is 2.3 kPa (@ 20°C) (Water).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapor Density</td>
<td>The highest known value is 0.62 (Air = 1) (Water).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volatility</td>
<td>Not available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water/Oil Dist. Coeff.</td>
<td>The product is much more soluble in water.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ionicity (in Water)</td>
<td>Not available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dispersion Properties</td>
<td>See solubility in water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solubility</td>
<td>Easily soluble in cold water, hot water.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Continued on Next Page
**Section 10. Stability and Reactivity Data**

<table>
<thead>
<tr>
<th>Stability</th>
<th>The product is stable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instability Temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Conditions of Instability</td>
<td>Incompatible materials</td>
</tr>
<tr>
<td>Incompatibility with various substances</td>
<td>Slightly reactive to reactive with oxidizing agents, metals, alkalis.</td>
</tr>
<tr>
<td>Corrosivity</td>
<td>Non-corrosive in presence of glass.</td>
</tr>
</tbody>
</table>

**Special Remarks on Reactivity**

Incompatible with KMnO₄, H₂SO₄, BrF₃, BrCl₃, cyanides, sulfides, sulfites, metal oxides, formaldehyde, acetic anhydride, alkali metals, aluminum, amines, copper, copper alloys, fluorine, iron, sodium hydroxide, steel, sulfuric acid, vinyl acetate, zinc, potassium permanganate, cesium acetylene carbide, rubidium acetylene carbide, rubidium carbide, sodium, chlorosulfonic acid, oleum, carbonates, perchloric acid, calcium phosphate, metal oxides, acetates, cesium carbide, beta-propiolactone, ethyleneimine, propylene oxide, lithium silicides, alcohols + hydrogen cyanide, 2-aminoethanol, ammonium hydroxide, calcium carbide, 1,1-difluoroethylene, ethylene diamine, magnesium boride, mercuric sulfate, uranium phosphate.

Releases fumes of Hydrogen chloride and Hydrogen on contact with metals. Relases Chlorine gas on contact with oxidizers.

**Special Remarks on Corrosivity**

Not available.

**Polymerization**

Will not occur.

---

**Section 11. Toxicological Information**

**Routes of Entry**

Absorbed through skin. Eye contact.

**Toxicity to Animals**

For Hydrochloric Acid:
- Acute oral toxicity (LD₅₀): 900 mg/kg [Rabbit].
- Acute toxicity of the vapor (LC₅₀): 1108 ppm, 1 hours [Mouse].
- Acute toxicity of the vapor (LC₅₀): 3124 ppm, 1 hours [Rat].

**Chronic Effects on Humans**

CARCINOGENIC EFFECTS: Classified 3 (Not classifiable for human) by IARC [Hydrogen chloride].

MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. [Potassium chloride]. Mutagenic for bacteria and/or yeast. [Potassium chloride].

Contains material which may cause damage to the following organs: blood, cardiovascular system, upper respiratory tract, skin, eyes, teeth.

**Other Toxic Effects on Humans**

Hazardous in case of skin contact (irritant), of ingestion. Slightly hazardous in case of skin contact (permeator), of inhalation.

**Special Remarks on Toxicity to Animals**

Not available.

**Special Remarks on Chronic Effects on Humans**

May affect genetic material (mutagenic).

May cause adverse reproductive effects.

**Special Remarks on other Toxic Effects on Humans**

Acute Potential Health Effects:

Skin: Causes skin irritation.

Eyes: Causes eye irritation.

Inhalation: Inhalation of mist or vapor may cause respiratory tract irritation. It is expected to be a low hazard for usual industrial handling.

Ingestion: Ingestion of large doses may cause digestive/gastrointestinal tract irritation with nausea, vomiting and diarrhea. May affect behavior, the cardiovascular system, and urinary system (kidneys).

Chronic Potential Health Effects:

Prolonged or repeated inhalation or ingestion may affect liver, respiratory tract (chronic bronchitis), teeth (yellowing of teeth and erosion of tooth enamel), kidneys, and behavior. Prolonged or repeated skin contact may cause dermatitis.
Section 12. Ecological Information

Ecotoxicity  Not available.

BOD5 and COD  Not available.

Products of Biodegradation  Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation  The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation  Not available.

Section 13. Disposal Considerations

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

Section 14. Transport Information

DOT Classification  Not a DOT controlled material (United States).

Identification  Not applicable.

Special Provisions for Transport  Not applicable.

DOT (Pictograms)

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations  Connecticut hazardous material survey: Hydrochloric acid
Illinois toxic substances disclosure to employee act: Hydrochloric acid
Illinois chemical safety act: Hydrochloric acid
New York release reporting list: Hydrochloric acid
Rhode Island RTK hazardous substances: Hydrochloric acid
Pennsylvania RTK: Hydrochloric acid
Minnesota: Hydrochloric acid
Massachusetts RTK: Hydrochloric acid
Massachusetts spill list: Hydrochloric acid
New Jersey: Hydrochloric acid
New Jersey spill list: Hydrochloric acid
Louisiana RTK reporting list: Hydrochloric acid
Louisiana spill reporting: Hydrochloric acid
California Director's List of Hazardous Substances: Hydrochloric acid
TSCA 8(b) inventory: Potassium chloride; Water; Hydrochloric acid
TSCA 4(a) proposed test rules: Hydrochloric acid
SARA 302/304/311/312 extremely hazardous substances: Hydrochloric acid
SARA 313 toxic chemical notification and release reporting: Hydrochloric acid 1.1172%
CERCLA: Hazardous substances.: Hydrochloric acid: 5000 lbs. (2268 kg);

California Proposition 65 Warnings  California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.
California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

California Other Regulations  Continued on Next Page

For Hydrochloric Acid/Hydrogen Chloride:
EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances. (EINECS no. 231-595-7).
Canada: Listed on Canadian Domestic Substance List (DSL).
China: Listed on National Inventory.
Japan: Listed on National Inventory (ENCS).
Korea: Listed on National Inventory (KECI).
Philippines: Listed on National Inventory (PICCS).
Australia: Listed on AICS.

For Potassium Chloride:
EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances. (EINECS no. 231-211-8).
Canada: Listed on Canadian Domestic Substance List (DSL).
China: Listed on National Inventory.
Japan: Listed on National Inventory (ENCS).
Korea: Listed on National Inventory (KECI).
Philippines: Listed on National Inventory (PICCS).
Australia: Listed on AICS.

Other Classifications

WHMIS (Canada) CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC) R36/38- Irritating to eyes and skin. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S37- Wear suitable gloves.

HMIS (U.S.A.)

Health Hazard 2
Fire Hazard 0
Reactivity 0
Personal Protection 0

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

Health 1 0
Flammability
Reactivity
Specific hazard

WHMIS (Canada) (Pictograms)

DSCL (Europe) (Pictograms)

TDG (Canada) (Pictograms)

ADR (Europe) (Pictograms)

Protective Equipment
Gloves.
Lab coat.

Continued on Next Page
Wear appropriate respirator when ventilation is inadequate.
Splash goggles.

**Section 16. Other Information**

- **MSDS Code**: BUF01
- **References**: Not available.
- **Other Special Considerations**: Not available.

Verified by Sonia Owen.  

**Notice to Reader**

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.