MATERIAL SAFETY DATA SHEET: CHEM-AQUA 100

Section I - General Information

Date of Issue: 10/18/2007 12:00:00 AM
Supercedes: 10/16/2007 12:00:00 AM

Chemical Name & Synonyms: N/A
Trade Name & Synonyms: CHEM-AQUA 100

Chemical Family: Alkaline solution
Formula is a mixture: \([ \sqrt{1} \)]

Manufacturer Name: CHEM-AQUA, INC
Manufacturer Address: BOX 152170 IRVING, TEXAS 75015

Prepared By: M MCDOWELL/ CHEMIST
Product Code Number: 0042
Emergency Phone Number: 800-424-9300

Section II - Hazardous Ingredients

THE HAZARDS PRESENTED BELOW ARE THOSE OF THE INDIVIDUAL COMPONENTS

<table>
<thead>
<tr>
<th>Chemical Name (Ingredients)</th>
<th>Hazard</th>
<th>TLV</th>
<th>PEL</th>
<th>STEL</th>
<th>CAS #</th>
</tr>
</thead>
<tbody>
<tr>
<td>SODIUM HYDROXIDE</td>
<td>CORROSIVE</td>
<td>N/E</td>
<td>2mg/m3 $2</td>
<td>2mg/m3 1</td>
<td>1310-73-2</td>
</tr>
<tr>
<td>SODIUM SULFITE</td>
<td>IRRITANT</td>
<td>N/E</td>
<td>N/E 2</td>
<td>N/E</td>
<td>7757-83-7</td>
</tr>
<tr>
<td>SODIUM POLYPHOSPHATE</td>
<td>IRRITANT</td>
<td>N/E</td>
<td>N/E 2</td>
<td>N/E</td>
<td>68915-31-1</td>
</tr>
<tr>
<td>$ CEILING LIMIT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Section III - Physical Data

Boiling Point (°F): 220°
Vapor Pressure (mm Hg): 14.8
Vapor Density (Air = 1): 0.6
pH @ 100%: 13.6
% Volatile by Volume: 90
H₂O Solubility: Complete

Specific Gravity (H₂O = 1): 1.15
Color: Colorless
Odor: Mild Ammonia
Clarity: Transparent
Evaporation Rate (BuAc = 1): 0.51
Viscosity: Non-Viscous

Section IV - Fire and Explosion Hazard

Flash Point: Non-flam
Flammable Limits: Hydrogen gas
LEL: 4%

Extinguishing Media:
- [✓] Foam
- [✓] Alcohol Foam
- [✓] CO₂
- [✓] Dry Chemical
- [✓] Water Spray
- [ ] Other

Method Used: N/A
UEL: 75%
Aerosol Level (NFPA 30B): N/A

NFPA 704 Hazard Rating:
- 4-Extreme
- 3-High
- 2-Moderate
- 1-Slight
- 0-Insignificant
- Health: 3
- Flammability: 1
- Instability: 1
- Special:

Special Fire Fighting Procedures:
Firefighters should wear a self-contained breathing apparatus and full protective gear. Extinguishing media should be chosen based on the nature of the surrounding fire. Cool fire-exposed containers with water spray to prevent bursting.

Unusual Fire and Explosion Hazards:
Prolonged contact with reactive metals, such as aluminum, copper, brass, bronze, chromium, magnesium, tin, zinc, and alloys, can cause the formation of flammable hydrogen gas which can form an explosive mixture with air. The use of water spray (fog) while effective, may cause frothing and foaming. Never use a water jet as this will just spread the fire. Use care as spills may be slippery.

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**Section V - Health and Hazard Data**

**Threshold Limit Value:**
2 mg/m³ as Sodium Hydroxide ceiling limit.

**Effects of Overexposure:**

**Acute:** (Short Term Exposure)
- **Eye Contact:** Corrosive. Causes burns, corneal damage, and possible blindness.
- **Skin Contact:** Corrosive. Causes burns and possible deep ulcerations or scarring. May cause allergic skin reaction seen as delayed skin rash which may be followed by blistering, scaling, and other skin effects.
- **Inhalation:** Causes burns to the respiratory tract, nose, mouth, and throat with discomfort, nasal discharge, sneezing, coughing, rapid heartbeat, and chest pain. Inhalation of mist or vapors may cause chemical pneumonitis which can cause damage and may be fatal. May cause allergic respiratory reaction.
- **Ingestion:** Corrosive. Causes burns to the mouth, throat, esophagus, and stomach with nausea and pain. Symptoms may include vomiting of blood. Blood loss through damaged tissue can lead to low blood pressure and shock, and may be fatal.

**Chronic:** (Long Term Exposure)
- May cause respiratory and skin sensitization in some individuals. May cause systemic sensitization through ingestion. Exposure to asthmatic, atopic, and sulfite sensitive individuals may result in severe broncho constriction, gastrointestinal disturbances, angio edema, flushing, tingling sensations, shock, and reduced levels in forced expiratory volume. Long term inhalation of excessive vapor may cause delayed lung injury seen as cyanosis, progressive chemical pneumonitis, and pulmonary edema. Overexposure can cause thyroid effects, testis damage, and reversible kidney effects. Medical conditions aggravated by exposure are pre-existing respiratory and skin conditions such as asthma, emphysema, and dermatitis.
- Target organs: Central nervous system, kidneys, lungs, blood forming organs, and testes. The primary routes of exposure are skin and eye contact.

**Primary Routes of Entry**

- [X] Inhalation
- [X] Ingestion
- [ ] Absorption

**Emergency First Aid Procedures:**

**Inhalation:**
Remove from the area to fresh air. If not breathing, clear the airway and start mouth to mouth artificial respiration. Get immediate medical attention.

**Eye Contact:**
Immediately rinse the eyes with water. Remove any contact lenses and continue flushing for at least 15 minutes. Hold the eyelids apart to ensure rinsing of the entire surface of the eyes and lids with water. Get immediate medical attention.

**Skin Contact:**
Immediately remove contaminated clothing and shoes. Flush affected areas with large amounts of water for 20 to 30 minutes. Get immediate medical attention. Discard clothing and shoes.

**Ingestion:**
Give 3 to 4 glasses of water, but do not induce vomiting. If vomiting occurs, give fluids again. Get immediate medical attention. Do not give anything by mouth to an unconscious or convulsing person.

**Notes to Physician:**
Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression, and convulsions may be needed. In severe cases of an allergic reaction, anaphylactic shock may occur. Have the person lie down with their legs above their chest to increase blood flow to the heart and brain. Ensure respiratory support by supplying oxygen and administer epinephrine as indicated.

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**Section VI - Toxicity Information**

- **Product Contains Chemicals Listed as Carcinogen or Potential Carcinogen By:**
  - [ ] IARC
  - [ ] NTP
  - [ ] OSHA
  - [ ] ACGIH
  - [ ] Other
VOC CONTENT: 0.5% by weight, 0.5% by volume, 6 G/L

SODIUM HYDROXIDE
ORL MSE LD50: 40 MG/KG 4.
ORL RBT LDLo: 500 MG/KG 4.
SKN RBT TCLo: 25 PPH 4.
SKN RBT SDT: 500 MG/24H SEVERE 4.
EYE RBT SDT: 1 MG/24H SEVERE 4.

SODIUM SULFITE

SODIUM POLYPHOSPHATES
ORL-RAT LD50: 3053 MG/KG 3.
SKN-RBT LD50: >7940 MG/KG 3.
EYE-RBT: MILDLY IRRITATING 3.

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**Section VII - Reactivity Data**

<table>
<thead>
<tr>
<th>Stability</th>
<th>Hazardous Polymerization</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ] Stable</td>
<td>[ ] Will not occur</td>
</tr>
<tr>
<td>[ ] Unstable</td>
<td>[ ] May occur</td>
</tr>
</tbody>
</table>

Conditions to Avoid:
None known

Incompatibility (Materials to Avoid):
Strong oxidizing agents such as chlorine bleach and concentrated hydrogen peroxide; acids, aldehydes, acrolein, acrylonitrile, chlorinated or fluorinated hydrocarbons, chlorine dioxide, leather, halogens, maleic anhydride, nitroethane, nitroparaffins, hydroquinone, chlorine trifluoride, 2-nitrophenol, nitropropane, organic halogen and nitro compounds, phosphorus, potassium persulfate, tetrahydrofuran, and wool; prolonged contact with reactive metals, such as aluminum, copper, brass, bronze, chromium, magnesium, tin, zinc, and alloys, can cause the formation of flammable hydrogen gas which can form an explosive mixture with air. Under certain conditions, may react with nitrites or other nitrosating agents to form carcinogenic nitrosamines.

Hazardous Decomposition Products:
Oxides of Carbon, Sulfur, Nitrogen, Sodium, and Phosphorous; Ammonia and Hydrogen gas.

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**Section VIII - Spill Or Leak Procedures**

Steps to be Taken if Material is Released or Spilled:
Wear appropriate protective clothing. Use care as spills may be slippery. Shut off source of leak. Dike and contain spill. Absorb with an inert material and transfer all material into a properly labeled container for disposal. Prevent product from contaminating soil or from entering sewage and drainage systems and bodies of water. Flush area with water.

Waste Disposal Method(s):
Dispose of in accordance with all federal, state, and local regulations.

Neutralizing Agent:
Use dilute acids such as Hydrochloric Acid or vinegar. Add cautiously while mixing. Wear appropriate protective clothing.

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**Section IX - Special Protection Information**

Required Ventilation:
Local ventilation is recommended to control exposure from operations that can generate excessive levels of mists. Local ventilation is preferred, because it prevents dispersion into work areas by controlling it at its source.

Respiratory Protection:
Respirators should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2-1992). For concentrations above the TLV and/or PEL but less than 10 times these limits, a NIOSH approved half-facepiece respirator equipped with appropriate chemical cartridges may be used. For concentrations greater than 10 times the TLV and/or PEL, consult the NIOSH respirator decision logic found in publication No. 87-116 or ANSI Z88.2-1992.

Glove Protection:
Neoprene or nitrile rubber gloves should be worn. Ensure compliance with OSHA's personal protective equipment (PPE) standard for hand
Eye Protection:
Chemical goggles and a face shield should be worn when handling. Ensure compliance with OSHA’s Personal Protective Equipment (PPE) standard for eye and face protection, 29 CFR 1910.133.

Other Protection:
Wear protective clothing when handling. A safety shower and an eyewash station should be available.

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### Section X - Storage and Handling Information

<table>
<thead>
<tr>
<th>Storage Temperature</th>
<th>Storage Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max: 120°F</td>
<td>[ ] Indoors</td>
</tr>
<tr>
<td>Min: 35°F</td>
<td>[ ] Outdoors</td>
</tr>
<tr>
<td></td>
<td>[ ] Heated</td>
</tr>
<tr>
<td></td>
<td>[ ] Refrigerated</td>
</tr>
</tbody>
</table>

Precautions to be Taken in Handling and Storing:
Always store material in its original container. Keep container tightly closed when not in use. Keep from freezing. If product freezes allow it to slowly warm to room temperature and stir thoroughly before using.

Other Precautions:
Keep out of reach of children. Read the entire label before using the product. Follow the label directions.

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### Section XI - Regulatory Information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Upper % Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>None.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Those Ingredients listed above are subject to the reporting requirements of 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

**CALIFORNIA PROPOSITION 65**
WARNING: This product contains the following chemical(s) known to the State of California to cause (1) Cancer or (2) Birth Defects or other reproductive harm. This product contains:
Arsenic(1&2), Cadmium(1&2), Mercury(2), Formaldehyde(1), Ethylene Glycol Monomethyl Ether(2), Lead(1&2), Nitrilotriacetic Acid(1), and Nitrilotriacetic Acid, Trisodium Salt Monohydrate(1) as trace contaminants.

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### Section XII - References

1. THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS AND BIOLOGICAL EXPOSURE INDICES, ACGIH, 2007.
2. OSHA PEL.
3. VENDOR’S MSDS.

ALL THE COMPONENTS OF THIS PRODUCT ARE IN COMPLIANCE WITH THE TOXIC SUBSTANCES CONTROL ACT (TSCA) AND ARE EITHER LISTED ON THE TSCA INVENTORY OR OTHERWISE EXEMPTED FROM LISTING.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE IN LIGHT OF CURRENT FORMULATION. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

CHEM-AQUA, INC assumes no responsibility for personal injury or property damage caused by the use, storage, or disposal of the product in a manner not recommended on the product label. Users assume all risks associated with such unrecommended use, storage, or disposal of the product.

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