MATERIAL SAFETY DATA SHEET

MANUFACTURER: TAYLOR TECHNOLOGIES, INC
31 LOVETON CIRCLE
SPARKS, MD  21152
TELEPHONE: 410-472-4340

1.PRODUCT IDENTIFICATION
CATALOG NO.: R-0619
PRODUCT NAME: Hardness Buffer
CHEMICAL FAMILY: Alkaline solution

2.INGREDIENTS

<table>
<thead>
<tr>
<th>INGREDIENT</th>
<th>CAS NO.</th>
<th>%</th>
<th>NATURE OF HAZARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Ammonium hydroxide</td>
<td>1336-21-6</td>
<td>&lt;30</td>
<td>Corrosive alkali Vapors harmful</td>
</tr>
<tr>
<td>Ammonium chloride</td>
<td>12125-02-9</td>
<td>&lt;10</td>
<td>Irritant</td>
</tr>
<tr>
<td>Ammonium sulfide</td>
<td>12135-76-1</td>
<td>&lt;1</td>
<td>Vapors harmful</td>
</tr>
<tr>
<td>Nonhazardous ingredients</td>
<td>NA</td>
<td>&lt;1</td>
<td>None</td>
</tr>
<tr>
<td>Deionized water</td>
<td>7732-18-5</td>
<td>to 100</td>
<td>None</td>
</tr>
</tbody>
</table>

*This chemical is subject to the reporting requirements of SARA Title III Section 313 and 40 CFR 372.

3.PHYSICAL/CHEMICAL CHARACTERISTICS
STATE: Liquid
APPEARANCE: Colorless to yellow
ODOR: Sulfidic/ammonical
BOILING PT (F): 120-140
pH: 10.6
SPECIFIC GRAVITY: .97
VAPOR PRESSURE (mm Hg): 143
VAPOR DENSITY (AIR=1): .6
PERCENT VOLATILE BY VOLUME: 92
SOLUBILITY IN WATER: Soluble

4.FIRE, EXPLOSION HAZARD AND REACTIVITY DATA
FLASH PT: NA
METHOD: NA
FLAMMABLE LIMITS: LEL: 16% as NH3  UEL: 27% as NH3
EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, water spray or foam
SPECIAL PROCEDURES: Wear self-contained (positive pressure if available) breathing apparatus and special protective clothing
FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: May emit toxic fumes of sulfur oxides, nitrogen oxides, ammonia, hydrogen sulfide, hydrogen chloride.
NFPA CODE: Health: 3  Flammability: 1  Reactivity: 2  Special: NA
CONDITIONS TO AVOID: Extreme heat, temperatures. Contact with acids, strong oxidizers, metals.

5.HEALTH HAZARD DATA
INGREDIENT: Ammonium hydroxide
TOXICITY: LD50(orl-rat): 350 mg/kg
PEL: 35 mg/m3 (as ammonia)  TLV: 18 mg/m3 (as ammonia)
STEL: 27 mg/m3 (as ammonia)

INGREDIENT: Ammonium sulfide
TOXICITY: LD50(orl-rat): 168 mg/kg
PEL: NE  TLV: NE
STEL: NE
5. HEALTH HAZARD DATA - continued

INGREDIENT: Ammonium chloride
TOXICITY: LD50 (oral-rat): 1650 mg/kg

PEL: NE  TLV: NE
STEL: NE

ROUTE(S) OF ENTRY: Inhalation X  Ingestion X  Skin X
TARGET ORGAN(S): Eyes, skin, respiratory tract
CARCINOGENICITY: NTP No  IARC No  OSHA No

HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:

EYES: Corrosive. Contact causes severe burns.
SKIN: Corrosive. Contact causes severe burns.
INGESTION: Corrosive. Causes severe irritation or burns of mouth, esophagus, stomach.
INHALATION: Irritant

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye, skin, and respiratory conditions

6. PRECAUTIONARY MEASURES

PROTECTIVE EQUIPMENT: Rubber gloves, safety glasses, lab coat, rubber apron, face shield, adequate ventilation
HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.
STORAGE: Cool, dry, well-ventilated area. Avoid direct sunlight.

7. EMERGENCY AND FIRST AID PROCEDURES

EYE AND SKIN CONTACT: Immediately flush eyes with water for 20 minutes or until chemical is removed. Call physician. Wash skin thoroughly with soap and water.
INGESTION: Give large amounts of water or large amounts of water with milk of magnesia. Call physician. DO NOT INDUCE VOMITING. DO NOT give anything by mouth to a person who is unconscious, rapidly losing consciousness, or convulsing.
INHALATION: Remove to fresh air. Call physician.

8. SPILL AND DISPOSAL PROCEDURES

SPILL OR RELEASE: Neutralize with dilute acid. Absorb with vermiculite or other inert material. Containerize for later disposal.
DISPOSAL: To comply with all local, state, and federal regulations.

NA = Not applicable
ND = Not determined
NE = Not established

This Material Safety Data Sheet has been prepared in accordance with 29 CFR Part 1910.1200 and contains information believed to be accurate and complete at the date of preparation. However, no warranty is expressed or implied. Advice given under "Spill and Disposal Procedures" assumes compliance with federal, state, and local regulations regarding the disposal of hazardous waste.

DATE PREPARED: July 2005