

MATERIAL SAFETY DATA SHEET

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1. PRODUCT IDENTIFICATION

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

2. INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
*Ammonium hydroxide	1336-21-6	<30	Corrosive alkali Vapors harmful
Ammonium chloride	12125-02-9	<10	Irritant
Ammonium sulfide	12135-76-1	<1	Vapors harmful
Nonhazardous ingredients	NA	<1	None
Deionized water	7732-18-5	to 100	None

*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(oral-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(oral-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