MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Alkali Solution for Calcium and Magnesium Test
Catalog Number: 2241732

Hach Company
P.O.Box 389
Loveland, CO USA 80539
(970) 669-3050

Emergency Telephone Numbers:
(Medical and Transportation)
(303) 623-5716 24 Hour Service
(515)232-2533 8am - 4pm CST

MSDS Number: M00284
Chemical Name: Not applicable
CAS No.: Not applicable
Chemical Formula: Not applicable
Chemical Family: Not applicable
Hazard: Causes burns. Toxic.
Date of MSDS Preparation:
Day: 21
Month: March
Year: 2003

2. COMPOSITION / INFORMATION ON INGREDIENTS

Sodium Hydroxide
CAS No.: 1310-73-2
TSCA CAS Number: 1310-73-2
Percent Range: 20.0 - 30.0
Percent Range Units: weight / volume
LD50: Oral rat LDLo = 500 mg/kg.
LC50: None reported
TLV: 2 mg/m³ Ceiling/STEL
PEL: 2 mg/m³
Hazard: Causes severe burns. Toxic.

Demineralized Water
CAS No.: 7732-18-5
TSCA CAS Number: 7732-18-5
Percent Range: 50.0 - 60.0
Percent Range Units: volume / volume
LD50: None reported
LC50: None reported
TLV: Not established
PEL: Not established
Hazard: No effects anticipated.

Nitritoltriethanol
CAS No.: 102-71-6
TSCA CAS Number: 102-71-6
Percent Range: 15.0 - 25.0
Percent Range Units: volume / volume
LD50: Oral rat LD50 = 8000 mg/kg; Oral mouse LD50 = 7400 mg/kg
LC50: None reported
TLV: 5mg/m³
PEL: Not established
Hazard: Causes severe eye irritation.

3. HAZARDS IDENTIFICATION

Emergency Overview:
Appearance: Clear, colorless to light yellow liquid
Odor: Ammonia
   CAUSES SEVERE BURNS
   MAY CAUSE KIDNEY OR LIVER DAMAGE BASED ON ANIMAL DATA

HMIS:
Health: 3
Flammability: 0
Reactivity: 0
Protective Equipment: X - See protective equipment, Section 8.

NFPA:
Health: 3
Flammability: 0
Reactivity: 0
Symbol: Not applicable

Potential Health Effects:
Eye Contact: Causes severe burns
Skin Contact: Causes severe burns
Skin Absorption: None reported
Target Organs: None reported
Ingestion: Causes severe burns May cause: liver damage kidney damage
Target Organs: Liver Kidneys
Inhalation: Causes severe burns
Target Organs: None reported
Medical Conditions Aggravated: Pre-existing: Eye conditions Skin conditions Respiratory conditions
Chronic Effects: Triethanolamine has caused liver and kidney damage in laboratory animals.

Cancer / Reproductive Toxicity Information:
This product does NOT contain any OSHA listed carcinogens.
This product does NOT contain any IARC listed chemicals.
This product does NOT contain any NTP listed chemicals.

Additional Cancer / Reproductive Toxicity Information: Contains: an experimental carcinogen.
Toxicologically Synergistic Products: None reported

4. FIRST AID

Eye Contact: Immediately flush eyes with water for 15 minutes. Call physician.
5. FIRE FIGHTING MEASURES

**Flammable Properties:** During a fire, corrosive and toxic gases may be generated by thermal decomposition.
**Flash Point:** Not applicable
**Method:** Not applicable

**Flammability Limits:**
- **Lower Explosion Limits:** Not applicable
- **Upper Explosion Limits:** Not applicable
**Autoignition Temperature:** Not applicable

**Hazardous Combustion Products:** Toxic fumes of: carbon monoxide, carbon dioxide, nitrogen oxides.

**Fire / Explosion Hazards:** None reported
- **Static Discharge:** None reported.
- **Mechanical Impact:** None reported

**Extinguishing Media:** Use media appropriate to surrounding fire conditions

**Fire Fighting Instruction:** As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

**Spill Response Notice:**

Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company’s emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance.

**Containment Technique:** Absorb spilled liquid with non-reactive sorbent material. Stop spilled material from being released to the environment.

**Clean-up Technique:** Cover spilled material with a dry acid, such as citric or boric. Scoop up slurry into a large beaker. Dilute with a large excess of water. Adjust to a pH between 6 and 9 with an acid, such as sulfuric or citric. Flush reacted material to the drain with a large excess of water. Decontaminate the area of the spill with a weak acid solution.

**Evacuation Procedure:** Evacuate local area (15 foot radius or as directed by your facility’s emergency response plan) when: If conditions warrant, increase the size of the evacuation. Any quantity is spilled.

**Special Instructions (for accidental release):** Mixture contains a component which is regulated as a water pollutant. Product is regulated as RCRA hazardous waste.

**304 EHS RQ (40 CFR 355):** Not applicable

**D.O.T. Emergency Response Guide Number:** 154

7. HANDLING / STORAGE

**Handling:** Avoid contact with eyes, skin, clothing. Do not breathe mist or vapors. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

**Storage:** Keep container tightly closed when not in use.

**Flammability Class:** Not applicable

8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT
Engineering Controls: Have an eyewash station nearby. Have a safety shower nearby. Maintain general industrial hygiene practices when using this product.

Personal Protective Equipment:
- Eye Protection: safety glasses with top and side shields
- Skin Protection: disposable latex gloves lab coat
- Inhalation Protection: adequate ventilation

Precautionary Measures: Avoid contact with: eyes skin clothing Do not breathe: mist/vapor Wash thoroughly after handling.
TLV: Not established
PEL: Not established

9. PHYSICAL / CHEMICAL PROPERTIES

Appearance: Clear, colorless to light yellow liquid
Physical State: Liquid
Molecular Weight: Not applicable
Odor: Ammonia
pH: 13
Vapor Pressure: Not determined
Vapor Density (air = 1): Not determined
Boiling Point: 97 °C (207 °F)
Melting Point: Not applicable
Specific Gravity (water = 1): 1.258
Evaporation Rate (water = 1): 0.36
Volatile Organic Compounds Content: Not determined
Partition Coefficient (n-octanol / water): Not applicable
Solubility:
- Water: Soluble
- Acid: Not determined
- Other: Not determined

Metal Corrosivity:
- Steel: 0.12 in/yr
- Aluminum: 400 in/yr

10. STABILITY / REACTIVITY

Chemical Stability: Stable when stored under proper conditions.
Conditions to Avoid: Extreme temperatures
Reactivity / Incompatibility: Incompatible with: oxidizers acids
Hazardous Decomposition: Heating to decomposition releases toxic and/or corrosive fumes of: carbon dioxide carbon monoxide nitrogen oxides
Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Product Toxicological Data:
LD50: None reported
LC50: None reported
Dermal Toxicity Data: None reported
Skin and Eye Irritation Data: None reported
Mutation Data: Nitrilotriethanol: Cytogenetic analysis - human lymphocytes - 100 µmol/l; Sister Chromatid exchange - human lymphocytes - 1 mmol/l; Oral mouse LDLo = 16 g/kg/64W-C - Carcinogenic effects
12. ECOLOGICAL INFORMATION

Product Ecological Information: --
No ecological data available for this product.

Ingredient Ecological Information: --
No ecological data available for the ingredients of this product.

13. DISPOSAL CONSIDERATIONS

EPA Waste ID Number: D002

Special Instructions (Disposal): Work in an approved fume hood. Dilute material with excess water making a weaker than 5% solution. Adjust to a pH between 6 and 9 with an acid, such as sulfuric or citric. Open cold water tap completely, slowly pour the reacted material to the drain. Allow cold water to run for 5 minutes to completely flush the system.

Empty Containers: Rinse three times with an appropriate solvent. Dispose of empty container as normal trash.

NOTICE (Disposal): These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information.

14. TRANSPORT INFORMATION

D.O.T.:

D.O.T. Proper Shipping Name: Sodium Hydroxide Solution

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DOT Hazard Class: 8
DOT Subsidiary Risk: NA
DOT ID Number: UN1824
DOT Packing Group: II

I.C.A.O.:

I.C.A.O. Proper Shipping Name: Sodium Hydroxide Solution

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ICAO Hazard Class: 8
ICAO Subsidiary Risk: NA
ICAO ID Number: UN1824
ICAO Packing Group: II

I.M.O.:

I.M.O. Proper Shipping Name: Sodium Hydroxide Solution

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I.M.O. Hazard Class: 8
I.M.O. Subsidiary Risk: NA
I.M.O. ID Number: UN1824
I.M.O. Packing Group: II

Additional Information: This product may be shipped as part of a chemical kit composed of various compatible dangerous goods for analytical or testing purposes. This kit would have the following classification:

Hazard Class: 9
UN Number 3316.

Proper Shipping Name: Chemical Kit


15. REGULATORY INFORMATION

U.S. Federal Regulations:
O.S.H.A.: This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

E.P.A.:
S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370): Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard
S.A.R.A. Title III Section 313 (40 CFR 372): This product does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.

302 (EHS) TPQ (40 CFR 355): Not applicable
304 CERCLA RQ (40 CFR 302.4): Sodium Hydroxide 1000 lbs.
304 EHS RQ (40 CFR 355): Not applicable
Clean Water Act (40 CFR 116.4): Sodium Hydroxide - RQ = 1000 lbs. (454 kgs.)
RCRA: Contains RCRA regulated substances. See Section 13, EPA Waste ID Number.
C.P.S.C.: The label for this product bears the signal word "POISON" because the concentration of Sodium Hydroxide in the product is greater than/equal to 10%.

State Regulations:
California Prop. 65: No Prop. 65 listed chemicals are present in this product.
Identification of Prop. 65 Ingredient(s): None
Trade Secret Registry: Not applicable

National Inventories:
U.S. Inventory Status: All ingredients in this product are listed on the TSCA 8(b) Inventory (40 CFR 710).
TSCA CAS Number: Not applicable

16. OTHER INFORMATION

Intended Use: Buffer
Revision Summary: Updates in Section(s) 14,

Legend:
NA - Not Applicable w/w - weight/weight
ND - Not Determined w/v - weight/volume
NV - Not Available v/v - volume/volume

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

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