MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: UniVer® 3 Hardness Reagent
Catalog Number: 21301H

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

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

MSDS Number: M00168
Chemical Name: Not applicable
CAS No.: Not applicable
Chemical Formula: Not applicable
PIN: NA
Intended Use: Hardness determination
Date of MSDS Preparation:
Day: 9
Month: 02
Year: 2004

2. COMPOSITION / INFORMATION ON INGREDIENTS

Sodium Carbonate

Percent Range: 55.0 - 65.0
Percent Range Units: weight / weight
CAS No.: 497-19-8
LD50: Oral rat LD50 = 4090 mg/kg
LC50: Inhalation rat LC50 = 2300 mg/m³/2hr
TLV: Not established
PEL: Not established
Ingredient WHMIS Symbol: Other Toxic Effects

Ethylenediaminetetraacetic Acid, Magnesium Disodium Salt

Percent Range: 1.0 - 5.0
Percent Range Units: weight / weight
CAS No.: 14402-88-1
LD50: None reported
LC50: None reported
TLV: Not established
PEL: Not established
Ingredient WHMIS Symbol: Not applicable

Other components, each

Percent Range: < 1.0
Percent Range Units: weight / weight
CAS No.: Not applicable
LD50: Not applicable
LC50: Not applicable
TLV: Not established
PEL: Not established  
Ingredient WHMIS Symbol: Not applicable

Ammonium Chloride  
Percent Range: 10.0 - 20.0  
Percent Range Units: weight / weight  
CAS No.: 12125-02-9  
LD50: Oral rat LD50 = 1650 mg/kg  
LC50: None reported  
TLV: 10 mg/m³  
PEL: 10 mg/m³  
Ingredient WHMIS Symbol: Not applicable

Sodium Sulfite  
Percent Range: 15.0 - 25.0  
Percent Range Units: weight / weight  
CAS No.: 7757-83-7  
LD50: Oral mouse LD50 = 820 mg/kg  
LC50: None reported  
TLV: Not established  
PEL: Not established  
Ingredient WHMIS Symbol: Other Toxic Effects

3. HAZARDS IDENTIFICATION

Emergency Overview:  
Appearance: Light pink powder  
Physical State: Solid  
Odor: Odorless  
MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION  
MAY CAUSE ALLERGIC RESPIRATORY REACTION IF SWALLOWED OR INHALED

HMIS:  
Health: 2  
Flammability: 0  
Reactivity: 0  
Protective Equipment: X - See protective equipment, Section 8.

Potential Health Effects:  
Eye Contact: May cause irritation  
Skin Contact: May cause irritation  
Skin Absorption: None Reported  
Target Organs: None Reported  
Ingestion: May cause: gastrointestinal irritation nausea vomiting diarrhea allergic respiratory reaction  
Target Organs: None reported  
Inhalation: May cause: respiratory tract irritation allergic respiratory reaction  
Target Organs: None reported  
Medical Conditions Aggravated: Sulfites are strong sensitizers. Inhalation and ingestion may cause allergic respiratory reactions in asthmatics. Persons with respiratory conditions should take special care when working with products that contain sulfites.  
Chronic Effects: None reported  
Cancer / Reproductive Toxicity Information: An ingredient of this mixture is: IARC Group 3: Non-classifiable Sulfites  
This product does NOT contain any NTP listed chemicals.

Additional Cancer / Reproductive Toxicity Information: Contains: an experimental mutagen.  
Toxicologically Synergistic Products: None reported
**WHMIS Hazard Classification:**  Class D, Division 2, Subdivision B - Toxic material (other toxic effects)

**WHMIS Symbols:**  Other Toxic Effects

### 4. FIRST AID

**Eye Contact:** Immediately flush eyes with water for 15 minutes. Call physician.

**Skin Contact (First Aid):** Wash skin with soap and plenty of water.

**Ingestion (First Aid):** Give large quantities of water. Call physician immediately.

**Inhalation:** Remove to fresh air. Give artificial respiration if necessary. Call physician.

### 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Does not burn, but may melt in a fire, releasing toxic fumes.

**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: nitrogen oxides. sulfur oxides. carbon monoxide, carbon dioxide.

**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 should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.

**Containment Technique:** Stop spilled material from being released to the environment.

**Clean-up Technique:** Scoop up spilled material into a large beaker and dissolve with 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: a pound or more of loose powder is spilled. If conditions warrant, increase the size of the evacuation.

**D.O.T. Emergency Response Guide Number:** None

### 7. HANDLING / STORAGE

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

**Storage:** Protect from: moisture Keep away from: acids oxidizers

### 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

**Engineering Controls:** Have an eyewash station 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 Protect from: moisture Keep away from: acids/acid fumes oxidizers

**TLV:** Not established

**PEL:** Not established
9. PHYSICAL / CHEMICAL PROPERTIES

Appearance: Light pink powder
Physical State: Solid
Molecular Weight: Not applicable
Odor: Odorless
pH: 1.6% solution = 10.1
Vapor Pressure: Not applicable
Vapor Density (air = 1): Not applicable
Melting Point: 95°C; 203°F
Specific Gravity (water = 1): 2.25
Evaporation Rate (water = 1): Not applicable
Volatile Organic Compounds Content: Not applicable
Coefficient of Water / Oil: Not applicable
Solubility:
  Water: Soluble
  Acid: Not determined
  Other: Not determined
Metal Corrosivity:
  Steel: 0.000 in/yr
  Aluminum: 0.022 in/yr

10. STABILITY / REACTIVITY

Chemical Stability: Stable when stored under proper conditions.
Conditions to Avoid: Heat Excess moisture
Reactivity / Incompatibility: Incompatible with: acids oxidizers
Hazardous Decomposition: Heating to decomposition releases toxic and/or corrosive fumes of: nitrogen oxides sulfur oxides ammonia carbon monoxide carbon dioxide
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: Sodium Carbonate: Eye rabbit 100 mg/24H - MODERATE; Skin rabbit 100 mg/24H - MILD; Ammonium Chloride: Eye rabbit - 500 mg/24H - MILD; Eye rabbit 100 mg - SEVERE
Mutation Data: Sodium Sulfite: Cytogenetic analysis, sperm morphology - mouse cells 25 mg/l; Mutation - human lymphocytes - 100 µmol/l
Reproductive Effects Data: None reported

Ingredient Toxicological Data: Sodium Carbonate: Oral rat LD50 = 4090 mg/kg; Sodium Sulfite: Oral mouse LD50 = 820 mg/kg; Ammonium Chloride: Oral rat LD50 = 1650 mg/kg

12. ECOLOGICAL INFORMATION

Product Ecological Information: --
No ecological data available for this product.
Ingredient Ecological Information: Sodium Sulfite: Biological Oxygen Demand (BOD): 0.12 lb/lb; 2600 ppm/24,48 & 96 H/mosquito fish/TLm/fresh water

13. DISPOSAL CONSIDERATIONS
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

T.D.G.: Proper Shipping Name: Not Currently Regulated
-- Hazard Class: NA
PIN: NA Group: NA Subsidiary Risk: NA

15. REGULATORY INFORMATION

National Inventories: Canadian Inventory Status: All ingredients of this product are DSL Listed. This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

16. OTHER INFORMATION


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

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