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**After Hours Emergency Nos.: (703) 447-9550**  
**(540) 272-3874**  
**Creation Date: 06/02/87 (1159-14)**  
**Revision Date: 12/01/10**

## MATERIAL SAFETY DATA SHEET

### I. CHEMICAL IDENTIFICATION

TRADE NAME: HYDRATE ALKALINITY Titrets® and INDICATOR & NEUTRALIZER SOLUTIONS

KIT CATALOG NO.: K-4710

COMPONENT CATALOG NOS.: A-4700 and A-4701

DESCRIPTION: Reagent ampoules and accessory solutions for the titrimetric determination of hydrate alkalinity in water. Each ampoule contains approximately 1.1 mL of liquid reagent sealed under vacuum. The bottle of indicator solution contains approximately 9 mL of accessory solution. The bottle of neutralizer solution contains approximately 18 mL of accessory solution.

**In the Ampoules:**

NFPA RATINGS: HEALTH: 1 FLAMMABILITY: 0 REACTIVITY: 0

**In the Indicator Solution:**

NFPA RATINGS: HEALTH: 1 FLAMMABILITY: 3 REACTIVITY: 0

**In the Neutralizer Solution:**

NFPA RATINGS: HEALTH: 3 FLAMMABILITY: 0 REACTIVITY: 0

### II. COMPOSITION / INFORMATION ON INGREDIENTS

**In the Ampoules:**

COMPONENT: Hydrochloric Acid, Concentrated  
CAS NO.: 7647-01-0 PERCENT: < 1.0

COMPONENT: Deionized Water  
CAS NO.: 7732-18-5 PERCENT: >99.0

**In the Indicator Solution:**

COMPONENT: Phenolphthalein  
CAS NO.: 77-09-8 PERCENT: < 2.0

COMPONENT: Methanol  
CAS NO.: 67-56-1 PERCENT: < 3.0

COMPONENT: Deionized Water  
CAS NO.: 7732-18-5 PERCENT: >40.0

COMPONENT: Ethyl Alcohol, Denatured  
CAS NO.: 64-17-5 PERCENT: <55.0

**In the Neutralizer Solution:**

COMPONENT: Barium Chloride, Dihydrate  
CAS NO.: 10326-27-9 PERCENT: <30.0

COMPONENT: Deionized Water  
CAS NO.: 7732-18-5 PERCENT: >70.0

### III. HAZARDS IDENTIFICATION

ACUTE TOXICITY: Irritation, cough, nausea, vomiting, diarrhea, weakness, headaches

CHRONIC TOXICITY: Irritation, dermatitis, CNS effects, possible carcinogen  
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin disorders

### IV. FIRST AID MEASURES

EYE AND SKIN CONTACT: Immediately flush eyes and skin with water for 15 minutes.

INGESTION: If victim is conscious and alert, give 2-4 cupfuls of milk or water and induce vomiting. Never give anything by mouth to an unconscious person. Seek medical attention.

INHALATION: Remove to fresh air. If necessary, give artificial respiration by mechanical means, do not use mouth to mouth resuscitation, seek medical advice.

### V. FIRE FIGHTING MEASURES

FLASH POINT: 52°F (closed cup) AUTOIGNITION POINT: 725°F  
FLAMMABILITY LIMITS: UPPER: 36.0% LOWER: 6.0%  
EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, water spray or foam

### VI. ACCIDENTAL RELEASE MEASURES

Take up with absorbent material. Place in small containers for disposal.

### VII. HANDLING AND STORAGE

**Always wear eye protection when working with these ampoules.**

**WARNING:** Breaking the ampoule tip in air when the valve assembly is not attached may cause the glass ampoule to shatter.

If this product is used as directed, the user will not come in contact with or be exposed to any of its chemical components.

Wash thoroughly after handling. Avoid contact with eyes.

Fragile. Liquid in glass. Handle with care.

Exposure of this product to temperatures up to 120°F (49°C) or even below 32°F (0°C) will not create a safety hazard. For optimum analytical accuracy, the product should be stored in the dark and at room temperature, and product components should not be used beyond expiration date.

### VIII. EXPOSURE CONTROLS / PERSONAL PROTECTION

OSHA PEL: 5 ppm C hydrogen chloride, 1000 ppm TWA ethanol, 200 ppm TWA methanol

ACGIH TLV: 2 ppm C hydrogen chloride, 1000 ppm TWA ethanol, 200 ppm TWA Methanol, 0.5 mg/m<sup>3</sup> barium

PROTECTIVE EQUIPMENT: Impact- and splash-resistant eyewear; Protective gloves compatible with the hazardous reagent constituents identified on this MSDS.

### IX. PHYSICAL AND CHEMICAL PROPERTIES

**In the Ampoules:**

STATE: Liquid APPEARANCE: Colorless ODOR: None  
SOLUBILITY IN WATER: Complete SPECIFIC GRAVITY: 1.0  
pH: < 2 BOILING POINT: 100°C MELTING POINT: 0°C  
VAPOR PRESSURE: N/A VAPOR DENSITY: N/A

**In the Indicator Solution:**

STATE: Liquid APPEARANCE: Colorless ODOR: Ethanol-like  
SOLUBILITY IN WATER: Miscible SPECIFIC GRAVITY: 0.88  
pH: 6.52 BOILING POINT: 88°C MELTING POINT: -68°C  
VAPOR PRESSURE & VAPOR DENSITY: Not determined

**In the Neutralizer Solution:**

STATE: Liquid APPEARANCE: Colorless ODOR: None  
SOLUBILITY IN WATER: Miscible SPECIFIC GRAVITY: 1.24  
pH: 6.02 BOILING POINT: 130°C MELTING POINT: 10°C  
VAPOR PRESSURE & VAPOR DENSITY: Not determined

### X. STABILITY AND REACTIVITY

INCOMPATIBILITIES: strong oxidizers, caustics

HAZARDOUS DECOMPOSITION PRODUCTS: formaldehyde gas, hydrogen chloride, hydrogen gas, chlorine gas, oxides of carbon

Stable under normal conditions.

### XI. TOXICOLOGICAL INFORMATION

CARCINOGENIC STATUS: Hydrochloric acid: IARC - Group 3, not classifiable as to its carcinogenicity to humans; Barium, soluble compounds and Ethyl alcohol: ACGIH - Group A4, not classifiable as a human carcinogen; Phenolphthalein: IARC - Group 2B, possibly carcinogenic to humans; NTP - reasonably anticipated to be a human carcinogen; California Proposition 65 - carcinogen

No other data available at this time.

### XII. ECOLOGICAL INFORMATION

Methanol is dangerous to aquatic life in high concentrations and is expected to biodegrade rapidly in soil and water. Ethyl alcohol is expected to volatilize and biodegrade. Barium chloride can accumulate in plants when it exceeds the calcium and magnesium levels in soil. Hydrochloric acid hydrolyzes when exposed to water, will neutralize soil carbonate-based components, and evaporates from soil.

No other data available at this time.

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### XIII. DISPOSAL CONSIDERATIONS

Dispose of in a manner consistent with Federal, State, and Local Regulations.

### XIV. TRANSPORT INFORMATION

Not regulated.

### XV. REGULATORY INFORMATION

#### EUROPEAN INFORMATION:

EU Symbols: Xn - HARMFUL, F - FLAMMABLE

Risk Phrases: Harmful: Possible risk of irreversible effects through inhalation, in contact with skin and if swallowed. Highly flammable.

Safety Phrases: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Keep container tightly closed. Keep container in well ventilated place. Keep away from sources of ignition - no smoking. If swallowed, seek medical advice immediately and show container or label.

#### CANADIAN INFORMATION:

WHMIS Classification: B2, D1B, D2A, D2B, E

All chemical components of this product are listed on Canada's DSL or are exempt.

#### U.S. INFORMATION:

RCRA: Contains RCRA regulated substances. EPA Waste ID Nos.:

Ampoules: D002; Indicator Solution: D001; Neutralizer Solution: D005

OSHA: This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard (29 CFR 1910.1200).

SARA Section 313: This product contains methanol, phenolphthalein, and a barium compound which are subject to the reporting requirements of Section 313 of SARA Title III.

CALIFORNIA PROPOSITION 65: This product contains a chemical known to the State of California as a carcinogen.

All chemical components of this product are listed on the TSCA Inventory.

### XVI. OTHER INFORMATION

THE ABOVE INFORMATION IS BELIEVED TO BE ACCURATE AND REPRESENTS THE BEST INFORMATION CURRENTLY AVAILABLE TO US. ALL PRODUCTS ARE OFFERED IN ACCORDANCE WITH THE MANUFACTURER'S CURRENT PRODUCTION SPECIFICATIONS AND ARE INTENDED SOLELY FOR USE IN ANALYTICAL TESTING. THE MANUFACTURER SHALL IN NO EVENT BE LIABLE FOR ANY INJURY, LOSS OR DAMAGE RESULTING FROM THE HANDLING, USE OR MISUSE OF THESE PRODUCTS.

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