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MATERIAL SAFETY DATA SHEET

I. CHEMICAL IDENTIFICATION

TRADE NAME: TOTAL HARDNESS Titrets®

KIT CATALOG NOS.: K-4502, K-4520, K-4530, K-4530S and K-4585

DESCRIPTION: Reagent ampoules and valve assemblies for the titrimetric determination of total hardness in water. Each Titret™ ampoule contains approximately 1.1 mL of liquid reagent sealed under vacuum. Each valve assembly contains approximately 0.05 mL of liquid reagent.

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

II. HAZARDS IDENTIFICATION

Harmful if swallowed.

ACUTE TOXICITY: Irritation, nausea, headache

CHRONIC TOXICITY: Central nervous system depressant

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Skin and eye disorders, impaired kidney and liver function.

III. COMPOSITION / INFORMATION ON INGREDIENTS

In the Ampoule:

COMPONENT: Ethylenediamine Tetraacetate Magnesium Disodium Salt
CAS NO.: 14402-88-1 PERCENT: < 0.1

COMPONENT: Disodium Ethylenediamine Tetraacetate, dihydrate
CAS NO.: 6381-92-6 PERCENT: < 1.0

COMPONENT: 2-Amino-2-Ethyl-1,3-Propanediol
CAS NO.: 115-70-8 PERCENT: < 4.5

COMPONENT: Deionized Water
CAS NO.: 7732-18-5 PERCENT: > 94.4

In the Valve Assembly:

COMPONENT: Calmagite
CAS NO.: 3147-14-6 PERCENT: < 0.1

COMPONENT: Diethylene Glycol
CAS NO.: 111-46-6 PERCENT: > 99.9

IV. FIRST AID MEASURES

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

INGESTION: Seek medical advice.

INHALATION: Remove individual to fresh air.

V. FIRE FIGHTING MEASURES

FLASH POINT: 124°C AUTOIGNITION POINT: 224°C
FLAMMABILITY LIMITS: UPPER: 10.8% LOWER: 1.6%
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 the 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 should not be used beyond expiration date.

VIII. EXPOSURE CONTROLS / PERSONAL PROTECTION

OSHA PEL & ACGIH TLV: None established

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 Ampoule:

STATE: Liquid APPEARANCE: Colorless ODOR: None
SOLUBILITY IN WATER: Complete pH: 10 - 11
BOILING POINT: 100°C MELTING POINT: 0°C
VAPOR PRESSURE: N/A SPECIFIC GRAVITY: 1.0
VAPOR DENSITY: N/A

In the Valve Assembly:

STATE: Liquid APPEARANCE: Red ODOR: None
SOLUBILITY IN WATER: Miscible pH: Not available
BOILING POINT: 244°C MELTING POINT: -10.45°C
VAPOR PRESSURE: 1.12 mm Hg @ 15°C SPECIFIC GRAVITY: 1.1
VAPOR DENSITY: 3.6

X. STABILITY AND REACTIVITY

INCOMPATIBILITIES: strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: oxides of carbon
Stable under normal conditions.

XI. TOXICOLOGICAL INFORMATION

CARCINOGENIC STATUS: None

No other data available at this time.

XII. ECOLOGICAL INFORMATION

Diethylene glycol has a low potential to bioconcentrate and is practically non-toxic to aquatic organisms.

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

Risk Phrases: Harmful if swallowed.

Safety Phrases: If swallowed, seek medical advice immediately and show container or label. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

CANADIAN INFORMATION:

WHMIS Classification: D2A, D2B

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

U.S. INFORMATION:

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

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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