CHEMetrics, Inc.
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After Hours Emergency Nos.: **(703) 447-9550**
(540) 272-3874
Creation Date: **06/07/87 (1139-13)**
Revision Date: **10/06/09**

MATERIAL SAFETY DATA SHEET

I. CHEMICAL IDENTIFICATION

TRADE NAME: CHLORIDE Titrets® & ACIDIFIER and NORMALIZER SOLUTIONS

KIT CATALOG NO.: K-2002

COMPONENT CATALOG NOS.: A-2003 and A-2005

DESCRIPTION: Reagent ampoules, valve assemblies, and acidifier and normalizer solutions for the titrimetric determination of chloride in water. Each ampoule contains approximately 1 mL of liquid reagent sealed under vacuum. Each valve assembly contains approximately 0.05 mL of liquid reagent. The bottles of acidifier and normalizer solutions each contain approximately 9 mL of accessory solution.

In the Ampoule:
NFPA RATINGS: HEALTH: 1 FLAMMABILITY: 0 REACTIVITY: 0

In the Valve Assembly:
NFPA RATINGS: HEALTH: 1 FLAMMABILITY: 1 REACTIVITY: 0

In the Acidifier Solution:
NFPA RATINGS: HEALTH: 3 FLAMMABILITY: 0 REACTIVITY: 0

In the Normalizer Solution:
NFPA RATINGS: HEALTH: 1 FLAMMABILITY: 1 REACTIVITY: 0

II. COMPOSITION/INFORMATION ON INGREDIENTS

In the Ampoule:
COMPONENT: Mercuric Nitrate, Monohydrate
CAS NO.: 7783-34-8 PERCENT: < 0.1

COMPONENT: Nitric Acid
CAS NO.: 7697-37-2 PERCENT: < 0.1

COMPONENT: Deionized Water
CAS NO.: 7732-18-5 PERCENT: >98.8

In the Valve Assembly:
COMPONENT: Diphenylcarbazone
CAS NO.: 538-62-5 PERCENT: < 1.0

COMPONENT: Glycerin
CAS NO.: 56-81-5 PERCENT: >99.0

In the Acidifier Solution:
COMPONENT: Nitric Acid
CAS NO.: 7697-37-2 PERCENT: < 22.0

COMPONENT: Deionized Water
CAS NO.: 7732-18-5 PERCENT: > 78.0

In the Normalizer Solution:
COMPONENT: 2,5-Dihydroxybenzoic Acid
CAS NO.: 490-79-9 PERCENT: < 2.0

COMPONENT: Ethylene Glycol
CAS NO.: 107-21-1 PERCENT: >98.0

III. HAZARDS IDENTIFICATION

Corrosive. Causes severe burns.
ACUTE TOXICITY: Irritation, burns, nausea, headache
CHRONIC TOXICITY: Irritation, skin sensitization, liver and kidney damage
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye, skin and respiratory disorders, liver and kidney disorders

IV. FIRST AID MEASURES

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

INGESTION: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Seek medical advice.
INHALATION: Remove individual to fresh air.

V. FIRE FIGHTING MEASURES

FLASH POINT: 111°C (closed cup) AUTOIGNITION POINT: 400°C
FLAMMABILITY LIMITS: UPPER: 15.3% LOWER: 3.2%
EXTINGUISHING MEDIA: Alcohol foam, water, carbon dioxide or dry chemical.

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: Do not break the tip of the ampoule unless it is completely immersed in your sample. Breaking the tip in the air 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.
This product has a limited shelf life. Product should not be used after date specified on test kit.
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, if applicable, product components should not be used beyond expiration date.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

ACGIH TLV: 0.025 mg/m^3 TWA (skin) as mercury, 2 ppm TWA nitric acid, 10 mg/m^3 TWA glycerin, 100 mg/m^3 C (aerosol only) ethylene glycol
OSHA PEL: 0.1 mg/m^3 C as mercury, 2 ppm TWA nitric acid, 15 mg/m^3 TWA (total) glycerin
PROTECTIVE EQUIPMENT: Safety glasses, protective gloves

IX. PHYSICAL AND CHEMICAL PROPERTIES

In the Ampoule:
STATE: Liquid APPEARANCE: Colorless ODOR: None
SOLUBILITY IN WATER: Complete pH: 2
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: Burnt Orange to Brilliant Pink
ODOR: None
SOLUBILITY IN WATER: Miscible pH: 5.5
BOILING POINT: 290°C MELTING POINT: 20°C
VAPOR PRESSURE: 0.0025 mm Hg @ 50°C SPECIFIC GRAVITY: 1.26
VAPOR DENSITY: 3.1

In the Acidifier Solution:
STATE: Liquid APPEARANCE: Colorless ODOR: None
SOLUBILITY IN WATER: Miscible pH: < 2
BOILING POINT: 95°C MELTING POINT: -8°C
VAPOR PRESSURE: Not determined SPECIFIC GRAVITY: 1.0
VAPOR DENSITY: Not determined

In the Normalizer Solution:
STATE: Liquid APPEARANCE: Colorless to yellow tint ODOR: None
SOLUBILITY IN WATER: Miscible pH: 1.6
BOILING POINT: 197°C MELTING POINT: -13°C
VAPOR PRESSURE: 0.05 mm Hg @ 20°C (Ethylene Glycol)
SPECIFIC GRAVITY: 1.1 VAPOR DENSITY: 2.14 (Ethylene Glycol)

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X. STABILITY AND REACTIVITY

INCOMPATIBILITIES: metals, strong oxidizing and reducing agents, strong bases
HAZARDOUS DECOMPOSITION PRODUCTS: oxides of mercury, carbon and nitrogen
Stable under normal conditions.

XI. TOXICOLOGICAL INFORMATION

CARCINOGEN STATUS: Inorganic mercury compounds: ACGIH - Group A4, not classifiable as a human carcinogen; IARC - Group 3, not classifiable as to its carcinogenicity to humans
Ethylene glycol: ACGIH - Group A4, not classifiable as a human carcinogen
TOXICOLOGICAL STATUS: Mercury compounds: California Proposition 65 - reproductive toxicant (developmental)
No other data available at this time.

XII. ECOLOGICAL INFORMATION

No data available at this time.

XIII. DISPOSAL CONSIDERATIONS

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

XIV. TRANSPORT INFORMATION

U.S. DOT, IATA, and IMDG: Dangerous Goods in Excepted Quantities
Hazard Class: 8 UN No.: 1760 Packing Group: II

XV. REGULATORY INFORMATION

EUROPEAN INFORMATION:
EU Symbols: C-Corrosive, Xn-Harmful
Risk Phrases: Causes severe burns. Harmful if swallowed.
Safety Phrases: After contact with skin, wash immediately with plenty of water. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

CANADIAN INFORMATION:
WHMIS Classification: 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, D009; Acidifier and Normalizer Solutions: D002
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 nitric acid, ethylene glycol, and a mercury 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 reproductive toxicant.
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.