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After Hours Emergency Nos.: (703) 447-9550
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Creation Date: 07/15/87 (1759-11)
Revision Date: 11/22/10

MATERIAL SAFETY DATA SHEET

I. CHEMICAL IDENTIFICATION

TRADE NAME: CYANIDE Titrets® and ACTIVATOR SOLUTION

KIT CATALOG NO.: K-3815

COMPONENT CATALOG NO.: A-3802

DESCRIPTION: Reagent ampoules, valve assemblies and activator solution for the titrimetric determination of cyanide in water. Each ampoule contains approximately 1.1 mL of liquid reagent sealed under vacuum. Each valve assembly contains approximately 0.05 mL of liquid reagent. The bottle of activator solution contains approximately 18 mL of accessory solution.

In the Ampoule:

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

In the Valve Assembly:

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

In the Activator Solution:

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

II. COMPOSITION / INFORMATION ON INGREDIENTS

In the Ampoule:

COMPONENT: Silver Nitrate
CAS NO.: 7761-88-8 PERCENT: < 0.1

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

COMPONENT: Deionized Water
CAS NO.: 7732-18-5 PERCENT: >99.8

In the Valve Assembly:

COMPONENT: Sodium Hydroxide
CAS NO.: 1310-73-2 PERCENT: < 6.0

COMPONENT: Deionized Water
CAS NO.: 7732-18-5 PERCENT: > 7.0

COMPONENT: Glycerin
CAS NO.: 56-81-5 PERCENT: < 87.0

In the Activator Solution:

COMPONENT: 5-(p-Dimethylaminobenzylidene) rhodanine
CAS NO.: 536-17-4 PERCENT: < 0.1

COMPONENT: Acetone
CAS NO.: 67-64-1 PERCENT: > 99.9

III. HAZARDS IDENTIFICATION

ACUTE TOXICITY: Irritation, headache, dizziness, CNS effects, nausea, vomiting

CHRONIC TOXICITY: Irritation, conjunctivitis, CNS effects, motor and speech effects

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye, skin, respiratory or CNS disorders

IV. FIRST AID MEASURES

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

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 attention.

INHALATION: Remove individual to fresh air.

V. FIRE FIGHTING MEASURES

FLASH POINT (acetone): -18°C (closed cup)

AUTOIGNITION POINT (acetone): 465°C

FLAMMABILITY LIMITS (acetone): UPPER: 12.8% LOWER: 2.6%

EXTINGUISHING MEDIA: Water, dry chemical, foam or carbon dioxide

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 at room temperature, and product components should not be used beyond expiration date.

VIII. EXPOSURE CONTROLS / PERSONAL PROTECTION

ACGIH TLV: 500 ppm TWA acetone, 10 mg/m³ TWA glycerin, 2 mg/m³ C sodium hydroxide, 0.01 mg/m³ TWA silver, 2 ppm TWA nitric acid
OSHA PEL: 1000 ppm TWA acetone, 15 mg/m³ TWA glycerin (total dust), 2 mg/m³ TWA sodium hydroxide, 0.01 mg/m³ TWA silver, 2 ppm TWA nitric acid

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: 2.1 SPECIFIC GRAVITY: 1.0
BOILING POINT: 100°C MELTING POINT: 0°C
VAPOR PRESSURE: N/A VAPOR DENSITY: N/A

In the Valve Assembly:

STATE: Liquid APPEARANCE: Colorless ODOR: None
SOLUBILITY IN WATER: Miscible pH: 12.6
BOILING POINT: 290°C (Glycerin) MELTING POINT: 20°C (Glycerin)
VAPOR PRESSURE: 0.0025 mm Hg @ 50°C (Glycerin)
SPECIFIC GRAVITY: 1.26 (Glycerin) VAPOR DENSITY: 3.1 (Glycerin)

In the Activator Solution

STATE: Liquid APPEARANCE: Tangerine ODOR: Fragrant, mint-like
SOLUBILITY IN WATER: Miscible pH: 5 SPECIFIC GRAVITY: 0.79
BOILING POINT: 56.5°C MELTING POINT: -95°C
VAPOR PRESSURE: 400 mm Hg @ 39.5°C VAPOR DENSITY: 2.0

X. STABILITY AND REACTIVITY

INCOMPATIBILITIES: strong acids, strong oxidizing agents

HAZARDOUS DECOMPOSITION PRODUCTS: toxic and corrosive vapors, oxides of carbon, nitrogen and silver
Stable under normal conditions.

XI. TOXICOLOGICAL INFORMATION

CARCINOGENIC STATUS: Acetone: ACGIH - Group A4, not classifiable as a human carcinogen

No other data available at this time.

XII. ECOLOGICAL INFORMATION

Glycerin is expected to readily biodegrade in soil and water, it is not expected to bioaccumulate or be toxic to aquatic organisms. Acetone is expected to volatilize and leach in soil, is expected to biodegrade rapidly and is not expected to bioconcentrate.

No other 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: 9 UN No.: 3316 Packing Group: II

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XV. REGULATORY INFORMATION

EUROPEAN INFORMATION:

EU Symbols: F - HIGHLY FLAMMABLE, Xi - IRRITANT

Risk Phrases: Highly flammable. Irritating to eyes, respiratory system, and skin. Repeated exposure may cause skin dryness or cracking. Vapors may cause drowsiness and dizziness.

Safety Phrases: Keep away from sources of ignition - No smoking. Avoid contact with eyes and skin. In case of contact with eyes or skin, rinse immediately with plenty of water and seek medical advice. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

CANADIAN INFORMATION:

WHMIS Classification: B2, D2B, E

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

U.S. INFORMATION:

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

Ampoules: D002, D011; Valve Assemblies: D002; Activator Solution: D001

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 and a silver compound which are subject to the reporting requirements of Section 313 of SARA Title III.

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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