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**After Hours Emergency Nos.: (703) 447-9550**  
**(540) 272-3874**  
**Creation Date: 03/20/89 (2156-11)**  
**Revision Date: 12/01/10**

## MATERIAL SAFETY DATA SHEET

### I. CHEMICAL IDENTIFICATION

TRADE NAME: GLUTARALDEHYDE Titrets® and INDICATOR SOLUTION

KIT CATALOG NO.: K-4302

COMPONENT CATALOG NO.: A-4302

DESCRIPTION: Reagent ampoules and accessory solution for the titrimetric determination of glutaraldehyde in water. Each Titret™ ampoule contains approximately 1.1 mL of liquid reagent sealed under vacuum. The bottle of indicator solution contains approximately 9 mL of accessory solution.

**In the Titret™:**

NFPA RATINGS: HEALTH: 2 FLAMMABILITY: 0 REACTIVITY: 0

**In the Indicator Solution:**

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

### II. COMPOSITION / INFORMATION ON INGREDIENTS

**In the Titret™:**

COMPONENT: Sulfuric Acid  
 CAS NO.: 7664-93-9 PERCENT: < 1.0

COMPONENT: Sodium Sulfite  
 CAS NO.: 7757-83-7 PERCENT: < 17.0

COMPONENT: Deionized Water  
 CAS NO.: 7732-18-5 PERCENT: > 82.0

**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

### III. HAZARDS IDENTIFICATION

Harmful by inhalation, in contact with skin, and if swallowed.  
 ACUTE TOXICITY: Irritation, conjunctivitis, cyanosis, blindness, systemic toxicity, abdominal pain, headache, nausea, CNS depression  
 CHRONIC TOXICITY: Irritation, liver and kidney damage  
 MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye, skin, respiratory, liver or kidney 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. 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: 14°C, closed cup (Ethyl alcohol, denatured)

AUTOIGNITION POINT: N/A

FLAMMABILITY LIMITS (Ethyl alcohol, denatured):

UPPER: 19% LOWER: 4.3%

EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, or water spray

### 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 : 1000 ppm TWA ethyl alcohol, 200 ppm TWA methanol, 1mg/m<sup>3</sup>

TWA sulfuric acid

ACGIH TLV: 1000 ppm TWA ethyl alcohol, 200 ppm TWA methanol, 0.2mg/m<sup>3</sup>

TWA sulfuric 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 Titret™:**

STATE: Liquid APPEARANCE: Colorless to straw yellow ODOR: None

SOLUBILITY IN WATER: Miscible pH: 5 SPECIFIC GRAVITY: 1.18

BOILING POINT: 108°C MELTING POINT: 5°C

VAPOR PRESSURE: N/A VAPOR DENSITY: N/A

**In the Indicator Solution:**

STATE: Liquid APPEARANCE: Colorless ODOR: Ethanol-like

SOLUBILITY IN WATER: Miscible pH: Not available

SPECIFIC GRAVITY: 0.88

BOILING POINT: 88°C MELTING POINT: -68°C

VAPOR PRESSURE: Not determined VAPOR DENSITY: Not determined

### X. STABILITY AND REACTIVITY

INCOMPATIBILITIES: strong oxidizing agents, strong acids

HAZARDOUS DECOMPOSITION PRODUCTS: formaldehyde, oxides of sodium, sulfur and carbon

Stable under normal conditions.

### XI. TOXICOLOGICAL INFORMATION

**CARCINOGENIC STATUS:**

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

Ethyl alcohol is expected to volatilize and biodegrade. Methanol is dangerous to aquatic life in high concentrations and is expected to biodegrade rapidly in soil and water. Sulfuric acid is harmful to aquatic organisms.

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

### XV. REGULATORY INFORMATION

**EUROPEAN INFORMATION:**

EU Symbols: F - HIGHLY FLAMMABLE, Xn - HARMFUL

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

Safety Phrases: Avoid contact with skin and eyes. After contact with skin or eyes, wash immediately with plenty of water. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Keep container in a 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.

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## **XV. REGULATORY INFORMATION (continued)**

### **U.S. INFORMATION:**

RCRA: Contains RCRA regulated substances. EPA Waste ID No.:

Indicator 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 methanol and phenolphthalein 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.

*Titrets® is a registered trademark of CHEMetrics, Inc.*