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**After Hours Emergency Nos.: (703) 447-9550**  
**(540) 272-3874**  
**Creation Date: 03/03/89 (1134-15)**  
**Revision Date: 10/06/09**

## MATERIAL SAFETY DATA SHEET

### I. CHEMICAL IDENTIFICATION

TRADE NAME: CARBON DIOXIDE Titrets® & ACTIVATOR and NEUTRALIZER SOLUTIONS

KIT CATALOG NOS.: K-1910, K-1920 and K-1925

COMPONENT CATALOG NOS.: A-1900, A-1905, A-1910 and A-1925

DESCRIPTION: Reagent ampoules and accessory solutions for the titrimetric determination of carbon dioxide in water. Each Titret™ ampoule contains approximately 1 mL of liquid reagent sealed under vacuum. The bottles of activator and neutralizer solution each contain approximately 9 mL of accessory solution.

**In the Ampoule:**

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

**In the Activator 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 Ampoule:**

COMPONENT: Sodium Hydroxide  
CAS NO.: 1310-73-2 PERCENT: < 0.2

COMPONENT: Deionized Water  
CAS NO.: 7732-18-5 PERCENT: > 99

COMPONENT: Other components  
CAS NO.: N/A PERCENT: < 0.1

Any component of this mixture not specifically listed (e.g. "other components") is not considered to present a carcinogen hazard.

**In the Activator 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: Hydrochloric Acid, Concentrated  
CAS NO.: 7647-01-0 PERCENT: < 3.5

COMPONENT: Deionized Water  
CAS NO.: 7732-18-5 PERCENT: >96.5

### 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, tooth erosion  
CHRONIC TOXICITY: Irritation, liver and kidney damage, tooth erosion  
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. If A-1900 solution has been ingested, induce vomiting by giving one teaspoon of syrup of ipecac.

Seek medical advice.

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 (Ethyl Alcohol, Denatured)  
FLAMMABILITY LIMITS (Ethyl Alcohol, Denatured):  
UPPER: 19% LOWER: 4.3%  
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:** 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.

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

OSHA PEL & ACGIH TLV: 1000 ppm TWA ethyl alcohol, 200 ppm TWA methanol, 2mg/m<sup>3</sup> C sodium hydroxide  
OSHA PEL: 5 ppm C, ACGIH TLV: 2 ppm C hydrochloric acid  
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: 11-12 SPECIFIC GRAVITY: 1.0  
BOILING POINT: 100°C MELTING POINT: 0°C  
VAPOR PRESSURE: N/A VAPOR DENSITY: N/A

**In the Activator Solution:**

STATE: Liquid APPEARANCE: Colorless  
ODOR: Ethanol-like SOLUBILITY IN WATER: Miscible  
pH: 6.5 SPECIFIC GRAVITY: 0.88  
BOILING POINT: 88°C MELTING POINT: -68°C  
VAPOR PRESSURE: Not determined VAPOR DENSITY: Not determined

**In the Neutralizer Solution:**

STATE: Liquid APPEARANCE: Colorless ODOR: None  
SOLUBILITY IN WATER: Complete SPECIFIC GRAVITY: 1.0  
pH: A-1905: 2.3, A-1910: 1.4, A-1925: 1.0  
BOILING POINT: 100°C MELTING POINT: 0°C  
VAPOR PRESSURE: 14 mm Hg @ 20°C VAPOR DENSITY: 0.7

### X. STABILITY AND REACTIVITY

INCOMPATIBILITIES: strong oxidizers, strong reducers  
HAZARDOUS DECOMPOSITION PRODUCTS: hydrogen chloride, hydrogen gas, chlorine gas, formaldehyde, oxides of carbon and sodium  
Stable under normal conditions.

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## XI. TOXICOLOGICAL INFORMATION

### CARCINOGENIC STATUS:

Hydrochloric acid: IARC - Group 3, not classifiable as to its carcinogenicity to humans

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

Hydrochloric acid hydrolyzes when exposed to water, will neutralize soil carbonate-based components, and evaporates from soil. 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.

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 - FLAMMABLE, Xn - HARMFUL, Xi - IRRITANT

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

Safety Phrases: Avoid contact with skin and eyes. Wear suitable gloves and eye/face protection. In case of contact with skin or eyes, 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). Keep container in a well ventilated place. Keep away from sources of ignition - No smoking.

### CANADIAN INFORMATION:

WHMIS Classification: B2, D1B, D2A, 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.: Activator Solution: D001; Neutralizer Solutions, A-1910 and A-1925: 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 methanol which is 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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