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**After Hours Emergency Nos.: (703) 447-9550**  
**(540) 272-3874**  
**Creation Date: 2010-10-09 (3000-4)**  
**Revision Date: 2012-02-14**

## MATERIAL SAFETY DATA SHEET

### I. CHEMICAL IDENTIFICATION

#### TRADE NAMES:

Carbohydrazide CHEMetrics® Refill and Vacu-vials® Ampoules  
 DEHA CHEMetrics® Refill and Vacu-vials® Ampoules

#### CATALOG NOS.:

K-1803 (ampoules), R-1805, R-1805E, R-3902, K-3903 (ampoules)

**DESCRIPTION:** Reagent ampoules for the determination of various analytes in water. (Note: Complete kits also contain an Activator Solution. CHEMetrics® kits contain comparators. See separate MSDSes for other kit components.)

Each CHEMet™ ampoule contains approximately 0.5 mL of liquid reagent sealed under vacuum. Each Vacu-vial™ ampoule contains approximately 2 mL of liquid reagent sealed under vacuum.

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

### II. HAZARDS IDENTIFICATION

Irritating to eyes and skin.

ACUTE TOXICITY: Irritation, nausea, vomiting

CHRONIC TOXICITY: Irritation, bronchitis, liver, kidney and heart damage

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Skin and respiratory disorders, impaired liver or kidney function

### III. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT: Chloroform  
 CAS NO.: 67-66-3 PERCENT: 0.1

COMPONENT: Ethyl Alcohol  
 CAS NO.: 64-17-5 PERCENT: 0.3 - 0.5

COMPONENT: Ammonium Acetate  
 CAS NO.: 631-61-8 PERCENT: 7.0 - 9.0

COMPONENT: Acetic Acid, Glacial  
 CAS NO.: 64-19-7 PERCENT: 8.0 - 9.0

COMPONENT: Deionized Water  
 CAS NO.: 7732-18-5 PERCENT: > 80

COMPONENT: Other components  
 CAS NO.: N/A PERCENT: < 1.0

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

### 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 advice.

INHALATION: Remove individual to fresh air.

### V. FIRE FIGHTING MEASURES

FLASH POINT: N/A AUTOIGNITION POINT: N/A

FLAMMABILITY LIMITS: UPPER: N/A LOWER: N/A

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:** 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 should not be used beyond expiration date.

### VIII. EXPOSURE CONTROLS / PERSONAL PROTECTION

OSHA PEL: 50 ppm C chloroform, 10 ppm TWA glacial acetic acid; 1000 ppm TWA ethyl alcohol

ACGIH TLV: 10 ppm TWA chloroform, 10 ppm TWA glacial acetic acid; 1000 ppm TWA ethyl alcohol

PROTECTIVE EQUIPMENT: Impact- and splash-resistant eyewear; Protective gloves compatible with the hazardous reagent constituents identified on this MSDS.

### IX. PHYSICAL AND CHEMICAL PROPERTIES

STATE: Liquid APPEARANCE: Colorless to pink tinge SPECIFIC GRAVITY: 1.0

ODOR: Mild, vinegar-like SOLUBILITY IN WATER: Miscible pH: 4.2

BOILING POINT: 102°C MELTING POINT: 2°C

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

### X. STABILITY AND REACTIVITY

INCOMPATIBILITIES: strong oxidizing agents, metals

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

### XI. TOXICOLOGICAL INFORMATION

CARCINOGEN STATUS: Chloroform: IARC - Group 2B, possibly carcinogenic to humans; ACGIH - Group A3, confirmed animal carcinogen with unknown relevance to humans; California Proposition 65 - carcinogen;

NTP - Reasonably anticipated to be a human carcinogen.

Ethyl Alcohol: ACGIH - Group A4, not classifiable as a human carcinogen.

No other data available at this time.

### XII. ECOLOGICAL INFORMATION

Acetic acid has high BOD which may cause oxygen depletion in aquatic systems and is expected to biodegrade rapidly. Chloroform 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

CHEMetrics® Refills: Not regulated.

CHEMetrics® and Vacu-vials® Kits also contain an Activator Solution. See corresponding MSDS for Transport Information.

### XV. REGULATORY INFORMATION

EUROPEAN INFORMATION:

EU Symbols: Xi - IRRITANT

Risk Phrases: Irritating to eyes and skin.

Safety Phrases: Avoid contact with skin and eyes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

CANADIAN INFORMATION:

WHMIS Classification: D1B, D2A, D2B

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

U.S. INFORMATION:

RCRA: Contains RCRA regulated substances. EPA Waste ID No.: D022

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

SARA: This product contains chloroform 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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**Creation Date: 2008-12-08 (2984-7)**  
**Revision Date: 2012-02-14**

## MATERIAL SAFETY DATA SHEET

### I. CHEMICAL IDENTIFICATION

TRADE NAME: COLOR COMPARATOR

CATALOG NOS.:

C-1805, C-1805E, C-1810, C-2810, C-2810A, C-2810B, C-2810C,  
 C-2810D, C-3810, C-3901, C-3902, C-4601, C-4601A, C-4601B,  
 C-4601C, C-4601D, C-4605, C-4605A, C-4605B, C-4605C, C-4605D,  
 C-4815, C-4815C, C-6502, C-6502D, C-7501, C-7501L, C-7511, C-7518,  
 C-7540, C-7599, C-9011

DESCRIPTION: Color standard ampoules used to quantify test results for the determination of various analytes in water. Each CHEMet™ and VACUette™ comparator ampoule contains approximately 1.7 mL of liquid reagent. Each ULR CHEMet™ comparator ampoule contains approximately 6.7 mL of liquid reagent.

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

### II. HAZARDS IDENTIFICATION

Harmful if swallowed.

ACUTE TOXICITY: Irritation, nausea, diarrhea, nerve depression

CHRONIC TOXICITY: Irritation, liver or kidney lesions

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye, skin, liver or kidney disorders

### III. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT: Diethylene Glycol  
 CAS NO.: 111-46-6 PERCENT: ≤ 25.0

COMPONENT: Deionized Water  
 CAS NO.: 7732-18-5 PERCENT: > 74

COMPONENT: Other components  
 CAS NO.: N/A PERCENT: < 1.0

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

### 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 advice.

INHALATION: Remove individual to fresh air.

### V. FIRE FIGHTING MEASURES

FLASH POINT: N/A AUTOIGNITION POINT: N/A

FLAMMABILITY LIMITS: UPPER: N/A LOWER: N/A

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.**

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, these products 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

STATE: Liquid APPEARANCE: Various colors ODOR: None

SOLUBILITY IN WATER: Miscible pH RANGE: 2.5 - 11.5

BOILING POINT: ≥ 100°C MELTING POINT: ≤ 0°C

VAPOR PRESSURE: N/A SPECIFIC GRAVITY: 1.0

VAPOR DENSITY: N/A

### X. STABILITY AND REACTIVITY

INCOMPATIBILITIES: acids, bases

HAZARDOUS DECOMPOSITION PRODUCTS: oxides of carbon

Stable under normal conditions.

### XI. TOXICOLOGICAL INFORMATION

CARCINOGEN STATUS: None

No other data available at this time.

### XII. ECOLOGICAL INFORMATION

Diethylene glycol has a low bioconcentration potential and is practically non-toxic 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

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.

CANADIAN INFORMATION:

WHMIS Classification: D2A

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

U.S. INFORMATION:

All chemical components of this product are listed on the TSCA Inventory.

### XVI. OTHER INFORMATION

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**Creation Date: 07/03/96 (2557-11)**  
**Revision Date: 11/22/10**

## MATERIAL SAFETY DATA SHEET

### I. CHEMICAL IDENTIFICATION

TRADE NAME: DEHA ACTIVATOR SOLUTION

CATALOG NO.: A-3900

DESCRIPTION: An accessory solution used in conjunction with reagent ampoules in the determination of DEHA in water. Each bottle contains approximately 9 mL of accessory solution.

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

### II. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT: Ferric Nitrate, Nonahydrate  
CAS NO.: 7782-61-8 PERCENT: < 3.0

COMPONENT: Nitric Acid  
CAS NO.: 7697-37-2 PERCENT: < 16.5

COMPONENT: Deionized Water  
CAS NO.: 7732-18-5 PERCENT: > 80.5

### III. HAZARDS IDENTIFICATION

Danger! Corrosive. Causes severe burns.

ACUTE TOXICITY: Irritation and burns, central nervous system depression, liver and kidney damage

CHRONIC TOXICITY: Dermatitis, methemoglobinemia

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye, skin and respiratory disorders, impaired liver or kidney function

### 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. If necessary, give oxygen or artificial respiration and seek medical advice.

### V. FIRE FIGHTING MEASURES

FLASH POINT: Non-combustible AUTOIGNITION POINT: N/A

FLAMMABILITY LIMITS: UPPER: N/A LOWER: N/A

EXTINGUISHING MEDIA: Water spray

### VI. ACCIDENTAL RELEASE MEASURES

Take up with absorbent material. Place in small containers for disposal.

### VII. HANDLING AND STORAGE

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.

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: 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

STATE: Liquid APPEARANCE: Colorless ODOR: None

SOLUBILITY IN WATER: Miscible pH: < 2

BOILING POINT: 95°C MELTING POINT: N/A

VAPOR PRESSURE: Not determined SPECIFIC GRAVITY: 1.08

VAPOR DENSITY: Not determined

### X. STABILITY AND REACTIVITY

INCOMPATIBILITIES: acids, bases, carbides, metals, hydrogen sulfide

HAZARDOUS DECOMPOSITION PRODUCTS: oxides of nitrogen

Stable under normal conditions.

### XI. TOXICOLOGICAL INFORMATION

CARCINOGENIC STATUS: None

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

Risk Phrases: Causes severe burns.

Safety Phrases: Avoid contact with skin and eyes. Wear suitable protective clothing, 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).

CANADIAN INFORMATION:

WHMIS Classification: 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 No.: 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 which is 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

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