

**CHEMetrics, Inc.**  
 4295 Catlett Rd., Calverton, VA 20138  
 (800) 356-3072 (540) 788-9026  
 Fax (540) 788-4856 E-mail [technical@chemetrics.com](mailto:technical@chemetrics.com)

**24 Hour Emergency Numbers:** (703) 590-9204  
 (540) 439-3860  
**Creation Date:** 04/16/91 (2309-10)  
**Revision Date:** 10/17/05

## MATERIAL SAFETY DATA SHEET

### I. CHEMICAL IDENTIFICATION

TRADE NAME: DETERGENTS CHEMets®

CATALOG NOS.: K-9400 and R-9400

DESCRIPTION: Reagent ampoule sets for the determination of anionic detergents in water. Each double tipped ampoule contains approximately 3 mL of liquid reagent. Each CHEMet™ ampoule contains approximately 0.24 mL of liquid reagent sealed under vacuum.

**In the Double Tipped Ampoules:**

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

**In the CHEMets®:**

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

### II. COMPOSITION/INFORMATION ON INGREDIENTS

**In the Double Tipped Ampoules:**

COMPONENT: Methylene Blue  
 CAS NO.: 61-73-4 PERCENT: <0.01

COMPONENT: Sulfuric Acid  
 CAS NO.: 7664-93-9 PERCENT: < 0.5

COMPONENT: Sodium Phosphate, Monobasic, Dihydrate  
 CAS NO.: 13472-35-0 PERCENT: < 2.0

COMPONENT: Deionized Water  
 CAS NO.: 7732-18-5 PERCENT: >30.0

COMPONENT: Chloroform  
 CAS NO.: 67-66-3 PERCENT: 66.7

**In the CHEMets®:**

COMPONENT: n-Propanol  
 CAS NO.: 71-23-8 PERCENT: 100.0

### III. HAZARDS IDENTIFICATION

Harmful if swallowed. May be absorbed through lungs and skin.  
 ACUTE TOXICITY: Irritation, cough, abdominal pain, burns, dizziness, nausea, vomiting, eye damage, headache, drowsiness, CNS effects  
 CHRONIC TOXICITY: Irritation, dermatitis, liver or kidney damage, defatting  
 MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Skin, respiratory, liver and kidney 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 to fresh air. If necessary, give artificial respiration by mechanical means, do not use mouth to mouth resuscitation, seek medical attention.

### V. FIRE FIGHTING MEASURES

FLASH POINT: 74°F (closed cup) AUTOIGNITION POINT: 775°F  
 FLAMMABILITY LIMITS: UPPER: 13.5% LOWER: 2.1%  
 EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, water spray or foam  
 FIRE/EXPLOSION HAZARDS-CHEMets: Fire hazard when exposed to heat or flame. Moderate explosion hazard when exposed to heat or flame.

### VI. ACCIDENTAL RELEASE MEASURES

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

### 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 the refill.

Product should be stored in the dark and at room temperature; however, temperatures up to 120°F or even below freezing will not normally affect reagent performance.

### VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

ACGIH TLV: 200 ppm TWA n-propanol, 10 ppm TWA chloroform, 1mg/m<sup>3</sup> TWA sulfuric acid

OSHA PEL: 200 ppm TWA n-propanol, 50 ppm C chloroform, 1mg/m<sup>3</sup> TWA sulfuric acid

PROTECTIVE EQUIPMENT: Safety glasses and protective gloves

### IX. PHYSICAL AND CHEMICAL PROPERTIES

**In the Double Tipped Ampoules:**

STATE: Liquid APPEARANCE: Two phase: Blue/Colorless  
 ODOR: Pleasant sweet ethereal SPECIFIC GRAVITY: 1.4832  
 SOLUBILITY IN WATER: 0.82% VAPOR PRESSURE: 160 mm Hg  
 BOILING POINT: 62°C MELTING POINT: -64°C VAPOR DENSITY: 4.12

**In the CHEMets®:**

STATE: Liquid APPEARANCE: Colorless ODOR: Ethanol-like  
 SOLUBILITY IN WATER: Miscible SPECIFIC GRAVITY: 0.805 @ 20°C  
 BOILING POINT: 97°C MELTING POINT: -127°C  
 VAPOR PRESSURE: N/A VAPOR DENSITY: N/A

### X. STABILITY AND REACTIVITY

INCOMPATIBILITIES: Strong bases, strong oxidants, metals  
 HAZARDOUS DECOMPOSITION PRODUCTS: When heated to decomposition, chlorine, phosgene gas, and oxides of carbon, nitrogen, phosphorus, sodium and sulfur may be emitted.  
 Stable under normal conditions.

### XI. TOXICOLOGICAL INFORMATION

CARCINOGENIC STATUS: IARC: Group 2B carcinogen (Chloroform),  
 NTP: Suspect carcinogen (Chloroform), California: Carcinogen (Chloroform)  
 No other data available at this time.

### XII. ECOLOGICAL INFORMATION

Chloroform is toxic to aquatic organisms, and is not expected to bioconcentrate.  
 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: 49 CFR, 173.4 Exceptions for Small Quantities  
 IATA: Dangerous Goods in Excepted Quantities  
 Hazard Class: 6 ID: UN 1888 GROUP: III

### XV. REGULATORY INFORMATION

**EUROPEAN INFORMATION:**

EU Symbols: Xn - HARMFUL, Xi - IRRITANT, F - HIGHLY FLAMMABLE  
 Risk Phrases: Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed. Risk of serious damage to eyes. Irritating to skin. Possible risks of irreversible effects. Vapors may cause drowsiness and dizziness. Highly flammable.

Safety Phrases: Avoid contact with eyes and skin. Wear suitable protective clothing, gloves, and eye/face protection. In case of contact with eyes or skin, rinse immediately and seek medical advice. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Keep away from sources of ignition - No smoking.

**CANADIAN INFORMATION:**

WHMIS Classification: D2B, B2  
 All chemical components of this product are listed on Canada's DSL or are exempt.

**U.S. INFORMATION:**

This product contains chloroform which is subject to SARA Section 313 reporting requirements.

CALIFORNIA PROPOSITION 65: "WARNING - 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.

CHEMets® is a registered trademark of CHEMetrics, Inc.



# MSDS

P.O. Box 329 - 802 Washington Avenue Chestertown, MD 21620 - USA

**MATERIAL SAFETY DATA SHEET**

TELEPHONE # FOR INFORMATION 410 778-3100

**24 HOUR EMERGENCY NUMBER (CHEM-TEL): USA, Canada, Puerto Rico 800-255-3924;****Outside North American Continent 813-248-0585 (call Collect)**

---

**1. Product Identification****Product Code:** 6025**Product Description:** Hydrochloric Acid, 0.5N**Manufactured By:** LaMotte Company  
802 Washington Avenue  
Chestertown, MD 21620

---

**2. Composition/Information On Ingredients**

Hazard	CAS#/Name	%	PEL	TLV
Yes	7647-01-0 Hydrochloric Acid	1.8	C 5 ppm	C 2 ppm
No	7732-18-5 Water	to 100%		

---

**3. Hazards Overview****Primary Route Of Entry:** Ingestion Skin

May irritate eyes and skin. Harmful if swallowed.

**HMIS Hazard****Scale: 4 = Extreme, 3 = High, 2 = Moderate, 1 = Slight, 0 = Least****Health: 1      Flammability: 0      Reactivity: 1****Carcinogenicity:** None**Other Health Related Comments:**

---

**Product Code:** 6025**Product Description:** Hydrochloric Acid, 0.5N

---

**4. First Aid Measures****Eye Contact:** Flush thoroughly with water for 15 minutes. Consult a physician if irritation develops**Skin Contact:** Flush skin with water while removing affected clothing. Wash skin with soap and water.**Ingestion:** Rinse out mouth. Drink plenty of water. Consult physician.**Inhalation:** Remove to fresh air.

---

**5. Fire Fighting Measures****Flash Point (Method Used):** N/A**LEL:** N/A**UEL:** N/A**Extinguishing Media:** Not a fire hazard**Special Fire Fighting Procedures:** N/A**Unusual Fire & Explosion Hazard:** N/A

---

**6. Accidental Release Measures**

Cover spill with sodium bicarbonate. Scoop up slurry and wash down drain with excess water.

---

**7. Handling & Storage**

Store in cool, dry, storage area away from incompatible materials.

---

---

**Product Code:** 6025**Product Description:** Hydrochloric Acid, 0.5N

---

**8. Exposure Controls/Personal Protection****Ventilation**

Normal

**Protection When Handling**

Eye Protection Gloves Lab Coat

**Work/Hygenic Practices:** Avoid contact with skin and clothing. Wash after handling.

---

**9. Physical & Chemical Properties****Appearance:** Clear Colorless Liquid**Solubility In Water:** Soluble**Odor:** None**pH:** 1**Vapor Density:** Unknown**Vapor Pressure:** Unknown**Boiling Point:** Unknown**Melting Point:** N/A

---

**10. Stability & Reactivity****Stable:** Yes**Conditions To Avoid:** Heat**Incompatibility (Materials To Avoid):** Metals, strong bases**Hazardous Decomposition Products:** N/A

---

**11. Toxicological Information**

Oral rabbit LD50: 900 mg/kg for hydrochloric acid, concentrated

**Target Organs:** Eyes Skin

**Product Code:** 6025

**Product Description:** Hydrochloric Acid, 0.5N

**12. Ecological Information**

Information Not Yet Available

**13. Disposal Considerations**

Add slowly to a solution of soda ash and slaked lime. Pour neutralized solution down drain with excess water. Dispose according to federal, state and local regulations.

**14. Transportation Information**

**Proper Shipping Name:**

**DOT:** HYDROCHLORIC ACID

**IATA:** HYDROCHLORIC ACID

**Hazard Class/Div:**

**DOT:** 8

**IATA:** 8

**UN:** 1789

**Packing Group:** III

**15. Regulatory Information**

**Chemical Inventory Status**

Hazard	Ingredient	USA	Europe	--- Canada ---		Australia	Japan
		TSCA	EC	DSL	NDSL		
Yes	7647-01-0 Hydrochloric Acid	Yes	Yes	Yes	No	Yes	Yes
No	7732-18-5 Distilled Water	Yes	Yes	Yes	No	Yes	Yes

**Federal, State, & International Regulations**

Ingredient	--- SARA 302 ---		----- SARA 313 -----		CERCLA	RCRA 261.33	TSCA 8(D)
	RQ	TPQ	Listed	Chemical Category			
7647-01-0 Hydrochloric Acid	5000	500	Yes	No	5000	No	No
7732-18-5 Distilled Water	No	No	No	No	No	No	No

**Product Code:** 6025

**Product Description:** Hydrochloric Acid, 0.5N

Ingredient	Acute	--- SARA 311/312 --- Hazard Categories				Reactivity	----- Australia -----		This MSDS Is WHMIS Compliant
		Chronic	Fire	Pressure	Hazchem Code		Poison Schedule		
7647-01-0 Hydrochloric Acid	Yes	Yes	No	No	No	2R	None Allocated		
7732-18-5 Distilled Water	No	No	No	No	No	None Allocated	None Allocated		
<b>product 6025 as a whole</b>	Yes	No	No	No	No	None Allocated	None Allocated	Yes	

**16. Other Information**

**Prepared By:** IP, Regulatory Affairs Department

**Revised:** 6/16/2006



# MSDS

P.O. Box 329 - 802 Washington Avenue Chestertown, MD 21620 - USA

## MATERIAL SAFETY DATA SHEET

TELEPHONE # FOR INFORMATION 410 778-3100

24 HOUR EMERGENCY NUMBER (CHEM-TEL): USA, Canada, Puerto Rico 800-255-3924;

Outside North American Continent 813-248-0585 (call Collect)

### 1. Product Identification

**Product Code:** 2781

**Product Description:** TC Titrant

**Manufactured By:** LaMotte Company

802 Washington Avenue  
Chestertown, MD 21620

### 2. Composition/Information On Ingredients

Hazard	CAS#/Name	%	PEL	TLV
Yes	7697-37-2 Nitric Acid	5	5 mg/cubic m; 2 ppm	5 mg/cubic m; 2 ppm
Yes	10035-06-0 Bismuth Nitrate Pentahydrate	0.4	N/E	N/E
No	7732-18-5 Water	to 100%		

### 3. Hazards Overview

**Primary Route Of Entry:** Skin Ingestion Inhalation

Poison! Danger! Corrosive. Liquid and mist cause severe burns to all body tissue. Inhalation may cause coughing, chest pains, damage to lungs. Harmful or fatal if swallowed.

#### HMIS Hazard

Scale: 4 = Extreme, 3 = High, 2 = Moderate, 1 = Slight, 0 = Least

Health: 2      Flammability: 0      Reactivity: 2

**Carcinogenicity:** None:

#### Other Health Related Comments:

See Section 11.

---

**Product Code:** 2781**Product Description:** TC Titrant

---

#### **4. First Aid Measures**

**Eye Contact:** Flush with water for 15 minutes. Get prompt medical attention.

**Skin Contact:** Flush with water for 15 minutes while removing affected clothing. Wash skin with soap and water. Consult a physician.

**Ingestion:** Do NOT induce vomiting. Rinse out mouth. Drink plenty of water. Get medical attention immediately.

**Inhalation:** Remove to fresh air.

---

#### **5. Fire Fighting Measures**

**Flash Point (Method Used):** N/A

**LEL:** N/A

**UEL:** N/A

**Extinguishing Media:** Not a fire hazard

**Special Fire Fighting Procedures:** Firefighters wear self-contained breathing apparatus

**Unusual Fire & Explosion Hazard:** Can react with metals to release flammable hydrogen gas.

---

#### **6. Accidental Release Measures**

Wear gloves and eye protection. Carefully cover spill with sodium bicarbonate. Wash neutralized slurry down drain with excess water.

---

#### **7. Handling & Storage**

Store in cool, dry ventilated area away from heat and such incompatible materials as strong alkalis, metals, cyanides, thiocyanates, sulfides and combustibles.

---



---

**Product Code:** 2781**Product Description:** TC Titrant

---

## **8. Exposure Controls/Personal Protection**

### **Ventilation**

Normal  
Use with adequate ventilation.

### **Protection When Handling**

Eye Protection Gloves Lab Coat

**Work/Hygenic Practices:** Avoid contact with skin or clothing. Wash after handling.

---

## **9. Physical & Chemical Properties**

<b>Appearance:</b>	Clear Colorless Liquid	<b>Vapor Density:</b>	1.3 ( Air=1)
<b>Solubility In Water:</b>	Soluble	<b>Vapor Pressure:</b>	>30 @ 20 deg C
<b>Odor:</b>	Slight Acrid	<b>Boiling Point:</b>	>100 deg C
<b>pH:</b>	<1	<b>Melting Point:</b>	N/A

---

## **10. Stability & Reactivity**

<b>Stable:</b>	Yes
<b>Conditions To Avoid:</b>	Heat
<b>Incompatibility (Materials To Avoid):</b>	Alkalies, metals
<b>Hazardous Decomposition Products:</b>	NOx

---

## **11. Toxicological Information**

Oral human LDLo: 430 mg/kg for nitric acid, concentrated. Oral rat LD50 for bismuth nitrate pentahydrate: 4042 mg/kg. Nitric acid investigated as a mutagen and reproductive effector. Bismuth nitrate as a reproductive effector.

**Target Organs:** Corrosive to all body parts Skin

**Product Code:** 2781**Product Description:** TC Titrant**12. Ecological Information**

Information Not Yet Available

**13. Disposal Considerations**

Add slowly to a solution of soda ash (sodium carbonate) and calcium hydroxide. Pour neutralized solution into running water and flush down drain. Dispose according to federal, state and local regulations.

**14. Transportation Information****Proper Shipping Name:**

**DOT:** NITRIC ACID  
<70% ACID

**IATA:** NITRIC ACID  
<20% ACID

**Hazard Class/Div:**

**DOT:** 8  
**IATA:** 8

**UN:** 2031**Packing Group:** II**15. Regulatory Information****Chemical Inventory Status**

Hazard	Ingredient	USA	Europe	--- Canada ---		Australia	Japan
		TSCA	EC	DSL	NDSL		
Yes	7697-37-2 Nitric Acid	Yes	Yes	Yes	No	Yes	Yes
Yes	10361-44-1 Bismuth Nitrate, anhydrous	Yes	Yes	Yes	No	Yes	Yes
No	7732-18-5 Distilled Water	Yes	Yes	Yes	No	Yes	Yes

**Product Code:** 2781

**Product Description:** TC Titrant

**Federal, State, & International Regulations**

<b>Ingredient</b>	<b>--- SARA 302 ---</b>		<b>----- SARA 313 -----</b>		<b>CERCLA</b>	<b>RCRA 261.33</b>	<b>TSCA 8(D)</b>
	<b>RQ</b>	<b>TPQ</b>	<b>Listed</b>	<b>Chemical Category</b>			
7697-37-2 Nitric Acid	1000	1000	Yes	No	1000	No	No
10361-44-1 Bismuth Nitrate, anhydrous	No	No	No	Nitrate Comp	No	No	No
7732-18-5 Distilled Water	No	No	No	No	No	No	No

**Product Code:** 2781

**Product Description:** TC Titrant

Ingredient	--- SARA 311/312 --- Hazard Categories					----- Australia -----		This MSDS Is WHMIS Compliant
	Acute	Chronic	Fire	Pressure	Reactivity	Hazchem Code	Poison Schedule	
7697-37-2 Nitric Acid	Yes	Yes	No	No	Yes	2PE	S6	
10361-44-1 Bismuth Nitrate, anhydrous	Yes	No	No	No	Yes	1[T]	None Allocated	
7732-18-5 Distilled Water	No	No	No	No	No	None Allocated	None Allocated	
<b>product 2781 as a whole</b>	Yes	No	No	No	Yes	2PE	S6	Yes

**16. Other Information**

**Prepared By:** IP, Regulatory Affairs Department

**Revised:** 6/16/2006