



PO Box 329 • 802 Washington Avenue • Chestertown, MD 21620 • USA

Telephone Number For Information 410-778-3100

24 Hour Emergency Number (CHEM-TEL) 800-255-3924

# MSDS

## Material Safety Data Sheet

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### 1. Product Identification

**Product Code:**

6566

**Manufactured By:**

LaMotte Company

**Product Description:**

Ammonium Persulfate

802 Washington Avenue

Chestertown, MD 21620

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### 2. Composition/Information on Ingredients

| Hazardous | Name                | CAS #     | %      | OSHA<br>PEL | ACGIH<br>TLV |
|-----------|---------------------|-----------|--------|-------------|--------------|
| Yes       | Ammonium Persulfate | 7727-54-0 | 98-100 | N/E         | 2            |

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### 3. Hazards Overview

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

**Danger! Strong oxidizer.** Contact with other material may cause fire. Harmful if swallowed. Corrosive. Will irritate eyes, nose and skin. Direct contact may cause burns to skin and eyes.

**HMIS Hazard:** (Scale: 4 = Extreme, 3 = High, 2 = Moderate, 1 = Slight, 0 = Least)

Health: 2      Flammability: 0      Reactivity: 3

**Carcinogenicity:** None

**Other Health Related Comments:**

Prolonged exposure to Ammonium Persulfate may cause sensitization, dermatitis.

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### 4. First Aid Measures

**Eye Contact:** Immediately flush with water for 15 minutes. Consult a physician.

**Skin Contact:** Immediately flush with water while removing affected clothing and shoes. Wash skin with soap and water.

**Ingestion:** Rinse out mouth. Drink glass of water. Induce vomiting. Call a doctor immediately.

**Inhalation:** Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult give oxygen.

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**Product Code: 6566**

**Product Description: Ammonium Persulfate**

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

**Flash Point:** N/A    **LEL:** N/A    **UEL:** N/A

#### **Fire Rating**

**Extinguishing Media:** Not a fire hazard

**Special Fire Fighting Procedures:** N/A

**Hazardous Combustion and/or Decomposition Products:** ammonia, SO<sub>2</sub>, NO<sub>2</sub>, sulfuric acid

**Unusual Fire & Explosion Hazard:** Ignites if moderately heated. Contact with other combustibles may cause fire  
Mixing a solution of ammonium persulfate with powdered iron or aluminum may result in explosion.

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

Keep combustibles away from spill. Avoid raising dust. Carefully sweep up spilled material using a non-sparking shovel and dust pan. Place in clean, dry plastic container with lid. Dispose of as hazardous waste. Flush spill area with water.

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

Store container tightly closed at temperature less than 20 degrees C, away from combustible and flammable materials.

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

#### **Ventilation**

A system of local and/or general exhaust is recommended.

#### **Protection When Handling**

Gloves    Eye Protection    Lab Coat

**Work/Hygienic Practices:** Avoid contact with skin. Use with adequate ventilation. Avoid breathing dust.

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

|                             |                         |                        |                        |
|-----------------------------|-------------------------|------------------------|------------------------|
| <b>Appearance:</b>          | White Crystal or powder | <b>Boiling Point:</b>  | N/A                    |
|                             |                         | <b>Melting Point:</b>  | dec.120 degC           |
|                             |                         | <b>pH:</b>             | 4 (0.1g in 10mL water) |
| <b>Odor:</b>                | None                    | <b>Vapor Density:</b>  | N/A                    |
| <b>Solubility in Water:</b> | Soluble                 | <b>Vapor Pressure:</b> | N/A                    |

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### **10. Stability & Reactivity**

**Stable:** No

**Conditions to Avoid:** Heat, shock, moisture

**Materials to Avoid:** Strong reducing agents, finely powdered metals, combustible materials.

**Hazardous Decomposition Products:** ammonia, SO<sub>2</sub>, NO<sub>2</sub>, sulfuric acid

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**Product Code: 6566**

**Product Description: Ammonium Persulfate**

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**11. Toxicological Information**

oral rat LD50: 820 mg/kg

**Target Organs:** Skin Respiratory System Eyes

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**12. Ecological Information**

Information not Available

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**13. Disposal Considerations**

Dispose of as hazardous waste according to federal, state and local regulations.

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**14. Transport Information**

**Proper Shipping Name:** AMMONIUM PERSULFATE

**Hazard Class/Div:** 5.1

UN1444

**Packing Group:** III

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**15. Regulatory Information**

**Chemical Inventory Status**

| <b>Ingredient</b>   | <b>USA<br/>TSCA</b> | <b>Europe<br/>EC</b> | <b>---Canada---<br/>DSL NDSL</b> |    | <b>Australia</b> | <b>Japan</b> |
|---------------------|---------------------|----------------------|----------------------------------|----|------------------|--------------|
| Ammonium Persulfate | Yes                 | Yes                  | Yes                              | No | Yes              | Yes          |

**Federal, State, & International Regulations**

| <b>Ingredient</b>   | <b>---SARA 302---</b> |            | <b>----- SARA 313 -----</b> |                          |               | <b>RCRA<br/>261.33</b> | <b>TSCA<br/>8(D)</b> |
|---------------------|-----------------------|------------|-----------------------------|--------------------------|---------------|------------------------|----------------------|
|                     | <b>RQ</b>             | <b>TPQ</b> | <b>Listed</b>               | <b>Chemical Category</b> | <b>CERCLA</b> |                        |                      |
| Ammonium Persulfate | No                    | No         | No                          | No                       | No            | No                     | No                   |

| <b>Ingredient</b>   | <b>----- SARA 311/312 -----<br/>Hazard Categories</b> |                 |          | <b>----- Australia -----<br/>Hazchem Code</b> |                | <b>Poison<br/>Schedule</b> | <b>This MSDS is<br/>WHMIS Compliant</b> |
|---------------------|---|-----------------|----------|---|----------------|----------------------------|---|
| Ammonium Persulfate | Acute: Yes  | Chronic: Yes    | Fire: No | 2P  | None allocated |                            | Yes                                     |
|                     | Pressure: No  | Reactivity: Yes |          |   |                |                            |   |

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**16. Other Information**

**Prepared By:** IP

**Revised:** 3/07/2005



# 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:** 6251

**Product Description:** Hydrochloric Acid, 2.5N

**Manufactured By:** LaMotte Company

802 Washington Avenue

Chestertown, MD 21620

### 2. Composition/Information On Ingredients

| Hazard | CAS#/Name                      | %       | PEL     | TLV     |
|--------|--------------------------------|---------|---------|---------|
| Yes    | 7647-01-0<br>Hydrochloric Acid | 9       | C 5 ppm | C 2 ppm |
| No     | 7732-18-5<br>Water             | to 100% |         |         |

### 3. Hazards Overview

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

Warning! Corrosive. Can cause severe irritation or burns to all body tissue. Harmful if swallowed.

#### HMIS Hazard

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

Health: 2      Flammability: 0      Reactivity: 1

**Carcinogenicity:** None:

**Other Health Related Comments:**

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**Product Code:** 6251

**Product Description:** Hydrochloric Acid, 2.5N

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

**Eye Contact:** Flush thoroughly with water for 15 minutes. Consult a physician.

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

**Ingestion:** Rinse out mouth. Drink plenty of water. Consult physician immediately.

**Inhalation:** Remove to fresh air. If breathing is difficult, give oxygen.

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#### **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:** Contact with metals may produce flammable hydrogen gas.

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

Wear acid-resistant gloves and eye protection. Cover spill with sodium bicarbonate. Scoop up neutralized slurry and wash down drain with excess water.

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

Store in cool, dry, storage area away from such incompatible materials as strong bases, ammonia, metals, sulfides and cyanides.

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

### **Ventilation**

Normal

### **Protection When Handling**

Eye Protection Gloves Lab Coat

**Work/Hygenic Practices:** Avoid contact with eyes, skin and clothing. Avoid inhalation of vapor. Wash after handling.

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

**Appearance:** Clear Colorless Liquid

**Solubility In Water:** Soluble

**Odor:** Slight

**pH:** <1

**Vapor Density:** Unknown

**Vapor Pressure:** Unknown

**Boiling Point:** Unknown

**Melting Point:** N/A

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## **10. Stability & Reactivity**

**Stable:** Yes

**Conditions To Avoid:** Heat

**Incompatibility (Materials To Avoid):** Strong alkalies, metals

**Hazardous Decomposition Products:** Hydrogen Chloride gas

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## **11. Toxicological Information**

Oral rabbit LD50: 900 mg/kg for hydrochloric acid, concentrated. Investigated as a tumorigen, mutagen, reproductive effector.

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

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**Product Code:** 6251

**Product Description:** Hydrochloric Acid, 2.5N

## 12. Ecological Information

Information Not Yet Available

## 13. Disposal Considerations

Add slowly to a solution of sodium carbonate and calcium hydroxide. Pour this 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:** II

## 15. Regulatory Information

### Chemical Inventory Status

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

### Federal, State, & International Regulations

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

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**Product Code:** 6251

**Product Description:** Hydrochloric Acid, 2.5N

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--- SARA 311/312 ---

**Hazard Categories**

----- Australia -----

**Hazchem  
Code**

**Poison  
Schedule**

**This MSDS Is  
WHMIS Compliant**

| <b>Ingredient</b>                      | <b>Acute</b> | <b>Chronic</b> | <b>Fire</b> | <b>Pressure</b> | <b>Reactivity</b> | <b>Hazchem<br/>Code</b> | <b>Poison<br/>Schedule</b> | <b>This MSDS Is<br/>WHMIS Compliant</b> |
|--|--------------|----------------|-------------|-----------------|-------------------|-------------------------|----------------------------|---|
| 7647-01-0<br>Hydrochloric Acid         | Yes          | Yes            | No          | No              | No                | 2R                      | None Allocated             |   |
| 7732-18-5<br>Distilled Water           | No           | No             | No          | No              | No                | None Allocated          | None Allocated             |   |
| <b>product<br/>6251<br/>as a whole</b> | Yes          | No             | No          | No              | No                | 2R                      | None Allocated             | Yes                                     |

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**16. Other Information**

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

**Revised:** 4/21/2006

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**MSDS**  
**Material Safety Data Sheet**

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Telephone Number 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**

|                             |                     |                         |  |
|-----------------------------|---------------------|-------------------------|--|
| <b>Product Code:</b>        | <b>6253</b>         | <b>Manufactured By:</b> | LaMotte Company                                |
| <b>Product Description:</b> | Sodium Citrate, 10% |                         | 802 Washington Avenue<br>Chestertown, MD 21620 |

**2. Composition/Information on Ingredients**

| <b>Hazardous</b> | <b>Name</b>                             | <b>CAS #</b> | <b>%</b> | <b>OSHA<br/>PEL</b> | <b>ACGIH<br/>TLV</b> |
|------------------|---|--------------|----------|---------------------|----------------------|
| Yes              | Kathon <sup>R</sup> CG/ICP Preservative | N/A          | <0.1     | N/E                 | N/E                  |
| No               | Sodium Citrate Dihydrate                | 6132-04-3    | 10       | N/E                 | N/E                  |
| No               | Water to 100%                           | 7732-18-5    | 90       |                     |                      |

**3. Hazards Overview**

**Primary Route of Entry:** Ingestion  
Extremely large oral doses may produce gastrointestinal disturbances.

**HMIS Hazard:** (Scale: 4 = Extreme, 3 = High, 2 = Moderate, 1 = Slight, 0 = Least)  
Health: 0      Flammability: 0      Reactivity: 0

**Carcinogenicity:** None

**Other Health Related Comments:** See Section 11.

**4. First Aid Measures**

- Eye Contact:** Flush with water for 15 minutes.
- Skin Contact:** Wash with soap and water.
- Ingestion:** Drink glass of water. Consult physician.
- Inhalation:** N/A

**5. Fire Fighting Measures**

**Flash Point:** N/A    **LEL:** N/A    **UEL:** N/A

**Fire Rating**

- Extinguishing Media:** Not a fire hazard
- Special Fire Fighting Procedures:** N/A
- Hazardous Combustion and/or Decomposition Products:** N/A
- Unusual Fire & Explosion Hazard:** N/A

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**Product Code: 6253**

**Product Description: Sodium Citrate, 10%**

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**6. Accidental Release Measures**

Mop up with paper towels.

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**7. Handling & Storage**

No special storage requirements.

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**8. Exposure Controls/Personal Protection**

**Ventilation**

No special ventilation requirements

**Protection When Handling**

Eye Protection

**Work/Hygienic Practices:** N/A

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**9. Physical & Chemical Properties**

**Appearance:** Clear Colorless Liquid

**Boiling Point:** > 100 deg C

**Melting Point:** Unknown

**pH:** 9

**Odor:** None

**Vapor Density:** <1 (Air=1)

**Solubility in Water:** Soluble

**Vapor Pressure:** <17 @ 20 deg C

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**10. Stability & Reactivity**

**Stable:** Yes

**Conditions to Avoid:** N/A

**Materials to Avoid:** N/A

**Hazardous Decomposition Products:** N/A

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**11. Toxicological Information**

Kathon<sup>®</sup> CG/ICP preservative is corrosive (acidic) and a potential skin sensitizer. However, it is present in product #6253 below de minimis concentration (<0.1%). **Product is non-toxic.**

**Target Organs:** N/A

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**12. Ecological Information**

Information not Available

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**13. Disposal Considerations**

Wash down drain with excess water. Dispose according to federal, state and local regulations.

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**14. Transport Information**

Not regulated for transport

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**Product Code: 6253****Product Description: Sodium Citrate, 10%**

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**15. Regulatory Information****Chemical Inventory Status**

| <b>Ingredient</b>                                    | <b>USA</b>   | <b>Europe</b> | <b>---Canada---</b> |             | <b>Australia</b> | <b>Japan</b> |
|--|--------------|---------------|---------------------|-------------|------------------|--------------|
|  | <b>TSCA</b>  | <b>EC</b>     | <b>DSL</b>          | <b>NDSL</b> |                  |              |
| Kathon <sup>R</sup> CG/ICP Preservative              | No (Exempt)* |               |                     |             |                  |              |
| Sodium Citrate, anhydrous (68-04-2)<br>Water to 100% | Yes          | Yes           | Yes                 | No          | Yes              | Yes          |

\*Kathon<sup>R</sup> is regulated in the U.S. under Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and is therefore exempt from US TSCA Inventory listing requirements.

**Federal, State, & International Regulations**

| <b>Ingredient</b>                                       | <b>---SARA 302---</b> |            | <b>----- SARA 313 -----</b> |                          |               | <b>RCRA</b>   | <b>TSCA</b> |
|---|-----------------------|------------|-----------------------------|--------------------------|---------------|---------------|-------------|
|   | <b>RQ</b>             | <b>TPQ</b> | <b>Listed</b>               | <b>Chemical Category</b> | <b>CERCLA</b> | <b>261.33</b> | <b>8(D)</b> |
| Kathon <sup>R</sup> CG/ICP Preservative                 | No                    | No         | No                          | No                       | No            | No            | No          |
| Sodium Citrate, anhydrous<br>(68-04-2)<br>Water to 100% | No                    | No         | No                          | No                       | No            | No            | No          |

| <b>Ingredient</b>                                       | <b>----- SARA 311/312 -----</b>  | <b>----- Australia -----</b> |                            | <b>This MSDS is<br/>WHMIS Compliant</b> |
|---|--|------------------------------|----------------------------|---|
|   | <b>Hazard Categories</b>   | <b>Hazchem<br/>Code</b>      | <b>Poison<br/>Schedule</b> |   |
| Kathon <sup>R</sup> CG/ICP<br>Preservative              | Acute: Yes Chronic: Yes Fire: No<br>Pressure: No Reactivity: No<br>(Pure/Liquid) |                              |                            |   |
| Sodium Citrate, anhydrous<br>(68-04-2)<br>Water to 100% | Acute: No Chronic: No Fire: No<br>Pressure: No Reactivity: No<br>(Pure/Solid)    | None<br>Allocated            | None Allocated             |   |
| <b>For product #6253 liquid<br/>mixture, as a whole</b> | Acute: No Chronic: No Fire: No<br>Pressure: No Reactivity: No                    | None<br>Allocated            | None Allocated             | Yes                                     |

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**16. Other Information****Prepared By: IP****Revised: 5/11/2005**



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Telephone Number 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)

# MSDS

## Material Safety Data Sheet

### 1. Product Identification

**Product Code:**

**6254**

**Product Description:**

Dimethylglyoxime, 1%

**Manufactured By:**

LaMotte Company

802 Washington Avenue

Chestertown, MD 21620

### 2. Composition/Information on Ingredients

| Hazardous | Name             | CAS #     | %   | OSHA<br>PEL     | ACGIH<br>TLV |
|-----------|------------------|-----------|-----|-----------------|--------------|
| Yes       | Ethyl Alcohol    | 64-17-5   | >90 | 1900 mg/cubic m | 1000 ppm     |
| Yes       | Methyl Alcohol   | 67-56-1   | >5  | 200 ppm         | 200 ppm      |
| Yes       | Dimethylglyoxime | 95-45-4   | 1   | N/E             | N/E          |
| No        | Water            | 7732-18-5 | <5  |                 |              |

### 3. Hazards Overview

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

**Danger! Poison! Vapor and liquid harmful.** Inhalation can cause headache, dizziness, nausea. May be irritating to eyes and skin. Harmful if swallowed: Ingestion may be fatal or cause blindness. Cannot be made nonpoisonous.

**HMIS Hazard:** (Scale: 4 = Extreme, 3 = High, 2 = Moderate, 1 = Slight, 0 = Least)

Health: 2      Flammability: 3      Reactivity: 1

**Carcinogenicity:** None

**Other Health Related Comments:** See Section 11.

### 4. First Aid Measures

**Eye Contact:** Flush with water for 15 minutes. Consult physician.

**Skin Contact:** Flush with water. Wash with soap and water.

**Ingestion:** Do not induce vomiting. Drink plenty of water. Call a physician immediately.

**Inhalation:** Remove to fresh air.

### 5. Fire Fighting Measures

**Flash Point:** ca. 20 deg C-closedcup      **LEL:** 3.3%      **UEL:** 19%

#### Fire Rating

**Extinguishing Media:** Dry chemical, CO<sub>2</sub>, or water spray

**Special Fire Fighting Procedures:** N/A

**Hazardous Combustion and/or Decomposition Products:** CO<sub>x</sub>

**Unusual Fire & Explosion Hazard:** Vapors may travel distance to ignition source and flash back.

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**Product Code: 6254**

**Product Description: Dimethylglyoxime, 1%**

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

Eliminate sources of ignition. Absorb on paper or spill pad. Allow to evaporate on iron pan in fume hood.

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

Store in a cool, dry, well-ventilated location, away from any area where the fire hazard may be acute. Do not use near hot surfaces, sparks, flame, static electricity or other sources of ignition.

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

#### **Ventilation**

A system of local and/or general exhaust is recommended.

#### **Protection When Handling**

Gloves Eye Protection Lab Coat

**Work/Hygienic Practices:** Use with adequate ventilation and avoid contact with skin.

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

|                             |                        |                        |                   |
|-----------------------------|------------------------|------------------------|-------------------|
| <b>Appearance:</b>          | Clear Colorless Liquid | <b>Boiling Point:</b>  | 78 deg C          |
|                             |                        | <b>Melting Point:</b>  | N/A               |
|                             |                        | <b>pH:</b>             | N/A               |
| <b>Odor:</b>                | Alcohol                | <b>Vapor Density:</b>  | 1.6(Air=1)        |
| <b>Solubility in Water:</b> | Soluble                | <b>Vapor Pressure:</b> | 40 mm at 19 deg C |

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### **10. Stability & Reactivity**

|                             |   |
|-----------------------------|---|
| <b>Stable:</b>              | Yes                                       |
| <b>Conditions to Avoid:</b> | Heat, sources of ignition                 |
| <b>Materials to Avoid:</b>  | Strong oxidizers, nitric or sulfuric acid |

**Hazardous Decomposition Products:** COx or formaldehyde when heated to decomposition.

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### **11. Toxicological Information**

**Oral human LDLo: 1400 mg/kg ethanol**

**Oral Human LDLo: 143 mg/kg methanol. Toxic.** Methanol affects Central Nervous System, particularly the optic nerve, and the Liver

**Oral rat LDLo: 250 mg/kg Dimethylglyoxime;** Investigated as a mutagen.

**Target Organs:** Central Nervous System, Liver

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### **12. Ecological Information**

Information not Available

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### **13. Disposal Considerations**

Small quantity: Flush down drain with excess water. Large quantity: Atomize into an incinerator. Dispose according to federal, state and local regulations.

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**Product Code: 6254****Product Description: Dimethylglyoxime, 1%**

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**14. Transport Information**

Domestic:

**Proper Shipping Name: ALCOHOLS, N.O.S. (ETHANOL DENATURED WITH 5% METHANOL)****Hazard Class/Div: 3****UN1987****Packing Group: II**

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International:

**Proper Shipping Name: ALCOHOLS, N.O.S. (ETHANOL DENATURED WITH 5% METHANOL)****Hazard Class/Div: 3, 6.1****UN1987****Packing Group: II**

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**15. Regulatory Information****Chemical Inventory Status**

| <b>Ingredient</b>         | <b>USA</b>  | <b>Europe</b> | <b>---Canada---</b> |             | <b>Australia</b> | <b>Japan</b> |
|---------------------------|-------------|---------------|---------------------|-------------|------------------|--------------|
|                           | <b>TSCA</b> | <b>EC</b>     | <b>DSL</b>          | <b>NDSL</b> |                  |              |
| Ethyl Alcohol             | Yes         | Yes           | Yes                 | No          | Yes              | Yes          |
| Methyl Alcohol            | Yes         | Yes           | Yes                 | No          | Yes              | Yes          |
| Dimethylglyoxime<br>Water | Yes         | Yes           | Yes                 | No          | Yes              | Yes          |

**Federal, State, & International Regulations**

| <b>Ingredient</b>         | <b>---SARA 302---</b> |            | <b>----- SARA 313 -----</b> |                          |               | <b>RCRA<br/>261.33</b> | <b>TSCA<br/>8(D)</b> |
|---------------------------|-----------------------|------------|-----------------------------|--------------------------|---------------|------------------------|----------------------|
|                           | <b>RQ</b>             | <b>TPQ</b> | <b>Listed</b>               | <b>Chemical Category</b> | <b>CERCLA</b> |                        |                      |
| Ethyl Alcohol             | No                    | No         | No                          | No                       | No            | D001                   | No                   |
| Methyl Alcohol            | No                    | No         | Yes                         | No                       | 5000          | U154                   | No                   |
| Dimethylglyoxime<br>Water | No                    | No         | No                          | No                       | No            | No                     | No                   |

| <b>Ingredient</b>                               | <b>----- SARA 311/312 -----</b> |   |           | <b>----- Australia -----</b> |                            | <b>This MSDS is<br/>WHMIS Compliant</b> |
|---|---------------------------------|---|-----------|------------------------------|----------------------------|---|
|   | <b>Hazard Categories</b>        |   |           | <b>Hazchem<br/>Code</b>      | <b>Poison<br/>Schedule</b> |   |
| Ethyl Alcohol                                   | Acute: Yes<br>Pressure: No      | Chronic: Yes<br>Reactivity: No<br>(Pure/Liquid) | Fire: Yes | None<br>allocated            | None allocated             |   |
| Methyl Alcohol                                  | Acute: Yes<br>Pressure: No      | Chronic: Yes<br>Reactivity: No<br>(Pure/Liquid) | Fire: Yes | 2PE                          | S6                         |   |
| Dimethylglyoxime<br>Water                       | Acute: Yes<br>Pressure: No      | Chronic: No<br>Reactivity: No<br>(Pure/Solid)   | Fire: No  | None<br>Allocated            | None Allocated             |   |
| <b>For #6254 liquid mixture,<br/>as a whole</b> | Acute: Yes<br>Pressure: No      | Chronic: Yes<br>Reactivity: No                  | Fire: Yes | 2PE                          | S6                         | Yes                                     |

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**Product Code: 6254**

**Product Description: Dimethylglyoxime, 1%**

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**16. Other Information**

Do not use near heat or flame.

**Prepared By: IP**

**Revised: 6/15/2005**



PO Box 329 • 802 Washington Avenue • Chestertown, MD 21620 • USA

Telephone Number 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)

# MSDS

## Material Safety Data Sheet

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### 1. Product Identification

**Product Code:**

6346

**Product Description:**

Silver Nitrate, 0.0141N

**Manufactured By:**

LaMotte Company

802 Washington Avenue

Chestertown, MD 21620

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### 2. Composition/Information on Ingredients

| Hazardous | Name           | CAS #     | %   | OSHA<br>PEL              | ACGIH<br>TLV             |
|-----------|----------------|-----------|-----|--------------------------|--------------------------|
| Yes       | Silver Nitrate | 7761-88-8 | 0.2 | 0.01 mg/cubic m<br>as Ag | 0.01 mg/cubic m<br>as Ag |
| No        | Water to 100%  | 7732-18-5 |     |                          |                          |

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### 3. Hazards Overview

**Primary Route of Entry:** Ingestion Skin

May stain skin. Harmful if swallowed.

**HMIS Hazard:** (Scale: 4 = Extreme, 3 = High, 2 = Moderate, 1 = Slight, 0 = Least)

Health: 1      Flammability: 0      Reactivity: 0

**Carcinogenicity:** None

**Other Health Related Comments:**

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### 4. First Aid Measures

**Eye Contact:** Immediately flush with water for 15 minutes. Consult a physician.

**Skin Contact:** Flush thoroughly with water. Remove affected clothing. Wash skin with soap and water.

**Ingestion:** Rinse out mouth. Drink water. Consult a physician.

**Inhalation:** N/A

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### 5. Fire Fighting Measures

**Flash Point:** N/A    **LEL:** N/A    **UEL:** N/A

**Fire Rating**

**Extinguishing Media:** Not a fire hazard

**Special Fire Fighting Procedures:** N/A

**Hazardous Combustion and/or Decomposition Products:** N/A

**Unusual Fire & Explosion Hazard:** N/A

---

### 6. Accidental Release Measures

Wear gloves to mop up and collect spilled liquid. Do not flush larger quantities of silver nitrate to sewer or drain. Dispose of as a hazardous waste, following federal, state and local regulations.

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**Product Code: 6346**

**Product Description: Silver Nitrate, 0.0141N**

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

Keep in a tightly closed container, stored in a cool, ventilated area. Protect from light.

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

#### **Ventilation**

Use with adequate ventilation.

#### **Protection When Handling**

Gloves Eye Protection Lab Coat

**Work/Hygienic Practices:** Avoid contact with skin and clothing. Will stain.

---

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

|                             |                        |                        |                |
|-----------------------------|------------------------|------------------------|----------------|
| <b>Appearance:</b>          | Clear Colorless Liquid | <b>Boiling Point:</b>  | ca. 100 deg C  |
|                             |                        | <b>Melting Point:</b>  | N/A            |
|                             |                        | <b>pH:</b>             | 5              |
| <b>Odor:</b>                | None                   | <b>Vapor Density:</b>  | <1 (Air=1)     |
| <b>Solubility in Water:</b> | Soluble                | <b>Vapor Pressure:</b> | <17 @ 20 deg C |

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### **10. Stability & Reactivity**

|                             |   |
|-----------------------------|---|
| <b>Stable:</b>              | Yes   |
| <b>Conditions to Avoid:</b> | Heat, light   |
| <b>Materials to Avoid:</b>  | Silver nitrate is incompatible with ammonia, alkalis, halides, and metal salts. |

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**Hazardous Decomposition Products:** N/A

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### **11. Toxicological Information**

**Oral rat LD50: 1173 mg/kg. Unknown route, man LDLo: 29 mg/kg for solid silver nitrate (toxic).**  
Investigated as a tumorigen, mutagen, reproductive effector.

**Target Organs:** skin

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### **12. Ecological Information**

Information not Available

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### **13. Disposal Considerations**

Small quantity: Flush down drain with excess water. Large quantity: Collect and dispose of as hazardous waste, according to federal, state and local regulations.

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### **14. Transport Information**

Not regulated for transport

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**Product Code: 6346**

**Product Description: Silver Nitrate, 0.0141N**

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**15. Regulatory Information**

**Chemical Inventory Status**

| <b>Ingredient</b> | <b>USA</b>  | <b>Europe</b> | <b>---Canada---</b> |             | <b>Australia</b> | <b>Japan</b> |
|-------------------|-------------|---------------|---------------------|-------------|------------------|--------------|
|                   | <b>TSCA</b> | <b>EC</b>     | <b>DSL</b>          | <b>NDSL</b> |                  |              |
| Silver Nitrate    | Yes         | Yes           | Yes                 | No          | Yes              | Yes          |
| Water to 100%     | Yes         | Yes           | Yes                 | No          | Yes              | Yes          |

**Federal, State, & International Regulations**

| <b>Ingredient</b> | <b>---SARA 302---</b> |            | <b>----- SARA 313 -----</b> |                          |               | <b>RCRA</b>   | <b>TSCA</b> |
|-------------------|-----------------------|------------|-----------------------------|--------------------------|---------------|---------------|-------------|
|                   | <b>RQ</b>             | <b>TPQ</b> | <b>Listed</b>               | <b>Chemical Category</b> | <b>CERCLA</b> | <b>261.33</b> | <b>8(D)</b> |
| Silver Nitrate    | No                    | No         | No                          | Silver compd             | 1             | No            | No          |
| Water to 100%     | No                    | No         | No                          | No                       | No            | No            | No          |

| <b>Ingredient</b>                               | <b>----- SARA 311/312 -----</b> |                                    |          | <b>----- Australia -----</b> |                            | <b>This MSDS is<br/>WHMIS Compliant</b> |
|---|---------------------------------|------------------------------------|----------|------------------------------|----------------------------|---|
|   | <b>Hazard Categories</b>        |                                    |          | <b>Hazchem<br/>Code</b>      | <b>Poison<br/>Schedule</b> |   |
| Silver Nitrate                                  | Acute: Yes                      | Chronic: Yes                       | Fire: No | 2X                           | S6                         |   |
| Water to 100%                                   | Acute: Yes                      | Chronic: Yes                       | Fire: No | 2X                           | None Allocated             | Yes                                     |
| <b>For #6346 liquid mixture,<br/>as a whole</b> | Pressure: No                    | Reactivity: Yes<br>(Pure/Solid)    |          |                              |                            |   |
|   | Pressure: No                    | Reactivity: No<br>(liquid/mixture) |          |                              |                            |   |

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**16. Other Information**

**Prepared By: IP**

**Revised: 7/06/2005**



PO Box 329 • 802 Washington Avenue • Chestertown, MD 21620 • USA  
 Telephone Number 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)

# MSDS

## Material Safety Data Sheet

### 1. Product Identification

|                             |                           |                         |  |
|-----------------------------|---------------------------|-------------------------|--|
| <b>Product Code:</b>        | <b>6537</b>               | <b>Manufactured By:</b> | LaMotte Company                                |
| <b>Product Description:</b> | Ammonium Hydroxide, Conc. |                         | 802 Washington Avenue<br>Chestertown, MD 21620 |

### 2. Composition/Information on Ingredients

| Hazardous | Name                                     | CAS #     | %     | OSHA<br>PEL             | ACGIH<br>TLV            |
|-----------|--|-----------|-------|-------------------------|-------------------------|
| Yes       | Ammonium Hydroxide (28-30% ammonia, NH3) | 1336-21-6 | 28-30 | 35 mg/cubic m<br>as NH3 | 25 mg/cubic m<br>as NH3 |
| No        | Water to 100%                            | 7732-18-5 | >70   |                         |                         |

### 3. Hazards Overview

**Primary Route of Entry:** Inhalation Skin

**POISON! DANGER! CORROSIVE.** May be fatal if swallowed or inhaled. Mist and vapor cause burns to every area of contact. Vapor and liquid are corrosive to eyes, respiratory system, and skin.

**HMIS Hazard:** (Scale: 4 = Extreme, 3 = High, 2 = Moderate, 1 = Slight, 0 = Least)

Health: 3      Flammability: 1      Reactivity: 2

**Carcinogenicity:** None

#### Other Health Related Comments:

Ammonium hydroxide investigated as a mutagen; ammonia vapor as both a tumorigen and mutagen.

### 4. First Aid Measures

**Eye Contact:** Immediately flush with water for 15 minutes. Call a doctor.

**Skin Contact:** Immediately flush skin with lots of water for 15 minutes while removing contaminated clothing.

**Ingestion:** Do not induce vomiting. Drink lots of water. Follow with dilute vinegar or fruit juice. Call a doctor immediately

**Inhalation:** Move to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. Call doctor

---

**Product Code:** 6537

**Product Description:** Ammonium Hydroxide, Conc.

---

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

**Flash Point:** N/A    **LEL:** 16%    **UEL:** 25%

#### **Fire Rating**

**Extinguishing Media:** Water spray

**Special Fire Fighting Procedures:** Wear protective equipment and self-contained breathing apparatus.

**Hazardous Combustion and/or Decomposition Products:** Ammonia, NOx

**Unusual Fire & Explosion Hazard:** Gives off flammable vapors which may form explosive mixture with air. Flammable vapors may accumulate in confined spaces. Vapors are sensitive to static charge. Closed containers exposed to heat may explode.

---

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

Ventilate area. Wear respirator with ammonia cartridge; Neoprene or Nitrile gloves. Dilute spill with water & neutralize with dilute hydrochloric acid. Mop up and flush to drain with excess water.

---

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

Store out of direct sunlight. Store tightly closed in cool (below 25 deg C), well-ventilated area away from such incompatible materials as strong acids, bleaches.

---

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

#### **Ventilation**

A system of local and/or general exhaust is recommended.

#### **Protection When Handling**

Gloves   Eye Protection   Lab Coat

**Work/Hygienic Practices:** Use only with good ventilation (fume hood). Avoid contact with eyes, skin, clothing. Avoid inhalation of vapor.

---

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

|                             |                        |                        |                 |
|-----------------------------|------------------------|------------------------|-----------------|
| <b>Appearance:</b>          | Colorless Clear Liquid | <b>Boiling Point:</b>  | ca. 36 deg C    |
|                             |                        | <b>Melting Point:</b>  | (-)72 deg C     |
|                             |                        | <b>pH:</b>             | 14              |
| <b>Odor:</b>                | Pungent, ammonia       | <b>Vapor Density:</b>  | 0.6(Air=1)      |
| <b>Solubility in Water:</b> | Soluble                | <b>Vapor Pressure:</b> | 115 mm @20deg C |

---

### **10. Stability & Reactivity**

**Stable:** Yes

**Conditions to Avoid:** Heat, light, sources of ignition.

**Materials to Avoid:** Acids, metals, bleaches, silver nitrate.

**Hazardous Decomposition Products:** Ammonia, NOx

---

---

**Product Code: 6537****Product Description: Ammonium Hydroxide, Conc.**

---

**11. Toxicological Information**

**Oral rat LD50: 350 mg/kg for ammonium hydroxide.** Eye, rabbit, standard Draize, 250 ug. (Severe). Investigated as a mutagen.

**Target Organs:** Lungs, Corrosive to all body parts

---

**12. Ecological Information****Environmental Fate:**

This material is not expected to significantly bioaccumulate.

---

**13. Disposal Considerations**

Carefully neutralize with 6M Hydrochloric Acid. Then flush down drain with excess water. Dispose according to federal, state and local regulations.

---

**14. Transport Information**

**Proper Shipping Name:** AMMONIA SOLUTIONS (10-35% Ammonia)

**Hazard Class/Div:** 8

**UN 2672**

**Packing Group:** III

---

**15. Regulatory Information****Chemical Inventory Status**

| <b>Ingredient</b>                        | <b>USA</b>  | <b>Europe</b> | <b>---Canada---</b> |             | <b>Australia</b> | <b>Japan</b> |
|--|-------------|---------------|---------------------|-------------|------------------|--------------|
|  | <b>TSCA</b> | <b>EC</b>     | <b>DSL</b>          | <b>NDSL</b> |                  |              |
| Ammonium Hydroxide (28-30% ammonia, NH3) | Yes         | Yes           | Yes                 | No          | Yes              | Yes          |

Water to 100%

**Federal, State, & International Regulations**

| <b>Ingredient</b>                        | <b>---SARA 302---</b> |            | <b>----- SARA 313 -----</b> |                          | <b>RCRA 261.33</b> | <b>TSCA 8(D)</b> |
|--|-----------------------|------------|-----------------------------|--------------------------|--------------------|------------------|
|  | <b>RQ</b>             | <b>TPQ</b> | <b>Listed</b>               | <b>Chemical Category</b> |                    |                  |
| Ammonium Hydroxide (28-30% ammonia, NH3) | No                    | No         | No                          | No                       | 1000               | No               |

Water to 100%

| <b>Ingredient</b>                        | <b>----- SARA 311/312 -----</b> |                |                  | <b>----- Australia -----</b> |                        | <b>This MSDS is WHMIS Compliant</b> |
|--|---------------------------------|----------------|------------------|------------------------------|------------------------|-------------------------------------|
|  | <b>Hazard Categories</b>        |                |                  | <b>Hazchem Code</b>          | <b>Poison Schedule</b> |                                     |
| Ammonium Hydroxide (28-30% ammonia, NH3) | Acute: Yes                      | Chronic: Yes   | Fire: No         | 2P                           | S6                     |                                     |
|  | Pressure: No                    | Reactivity: No | (Mixture/Liquid) |                              |                        |                                     |

Water to 100%

|   |              |                |          |    |    |     |
|---|--------------|----------------|----------|----|----|-----|
| <b>For product #6537 liquid mixture, taken as a whole</b> | Acute: Yes   | Chronic: Yes   | Fire: No | 2P | S6 | YES |
|   | Pressure: No | Reactivity: No |          |    |    |     |

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**Product Code: 6537**

**Product Description: Ammonium Hydroxide, Conc.**

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**16. Other Information**

**Prepared By: IP**

**Revised:6/20/2005**



# 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:** 4070

**Product Description:** Chloride Reagent B

**Manufactured By:** LaMotte Company

802 Washington Avenue

Chestertown, MD 21620

### 2. Composition/Information On Ingredients

| Hazard | CAS#/Name                   | %       | PEL                   | TLV                   |
|--------|-----------------------------|---------|-----------------------|-----------------------|
| Yes    | 7761-88-8<br>Silver Nitrate | 0.24    | 0.01 mg/cubic m as Ag | 0.01 mg/cubic m as Ag |
| No     | 7732-18-5<br>Water          | to 100% |                       |                       |

### 3. Hazards Overview

**Primary Route Of Entry:** Ingestion Skin

May stain skin. Harmful if swallowed.

#### HMIS Hazard

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

Health: 1      Flammability: 0      Reactivity: 0

**Carcinogenicity:** None

**Other Health Related Comments:**

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**Product Code:** 4070

**Product Description:** Chloride Reagent B

---

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

**Eye Contact:** Immediately flush with water for 15 minutes. Consult a physician.

**Skin Contact:** Flush with water. Remove affected clothing and wash skin with soap and water.

**Ingestion:** Rinse mouth. Drink glass of water. Consult a physician.

**Inhalation:** N/A

---

#### **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**

Wear gloves and eye protection. Mop up carefully. Collect liquid and containerize for disposal as hazardous waste.

---

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

Store out of sunlight in cool, dry storage area--away from incompatible materials.

---

## **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:** 5

**Vapor Density:** <1 (Air=1)

**Vapor Pressure:** <17 mm Hg @ 20 deg C

**Boiling Point:** ca. 100 deg C

**Melting Point:** ca. 0 deg C

---

## **10. Stability & Reactivity**

**Stable:** Yes

**Conditions To Avoid:** N/A

**Incompatibility (Materials To Avoid):** N/A

**Hazardous Decomposition Products:** NO<sub>x</sub>

---

## **11. Toxicological Information**

unknown route, man LD Lo: 29 mg/kg for solid Silver Nitrate

**Target Organs:** Skin

---

**Product Code:** 4070

**Product Description:** Chloride Reagent B

---

## **12. Ecological Information**

Information Not Yet Available

---

## **13. Disposal Considerations**

Small quantity: Flush down drain with excess water. Large quantity: Dispose of as hazardous waste, according to federal, state and local regulations.

---

## **14. Transportation Information**

Not Regulated For Transport

---

## **15. Regulatory Information**

### **Chemical Inventory Status**

| Hazard | Ingredient                   | USA  | Europe | --- Canada --- |      | Australia | Japan |
|--------|------------------------------|------|--------|----------------|------|-----------|-------|
|        |                              | TSCA | EC     | DSL            | NDSL |           |       |
| Yes    | 7761-88-8<br>Silver Nitrate  | Yes  | Yes    | Yes            | No   | Yes       | Yes   |
| No     | 7732-18-5<br>Distilled Water | Yes  | Yes    | Yes            | No   | Yes       | Yes   |

### **Federal, State, & International Regulations**

| Ingredient                   | --- SARA 302 --- |     | ----- SARA 313 ----- |                   | CERCLA | RCRA<br>261.33 | TSCA<br>8(D) |
|------------------------------|------------------|-----|----------------------|-------------------|--------|----------------|--------------|
|                              | RQ               | TPQ | Listed               | Chemical Category |        |                |              |
| 7761-88-8<br>Silver Nitrate  | No               | No  | No                   | Silver comp       | 1      | No             | No           |
| 7732-18-5<br>Distilled Water | No               | No  | No                   | No                | No     | No             | No           |

---

**Product Code:** 4070

**Product Description:** Chloride Reagent B

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--- SARA 311/312 ---

----- Australia -----

**Hazard Categories**

**Hazchem  
Code**

**Poison  
Schedule**

**This MSDS Is  
WHMIS Compliant**

**Ingredient**    **Acute**    **Chronic**    **Fire**    **Pressure**    **Reactivity**

7761-88-8    Yes    Yes    No    No    Yes  
Silver Nitrate

7732-18-5    No    No    No    No    No  
Distilled Water

2X    S6  
  
None Allocated    None Allocated

**product**    Yes    Yes    No    No    No    None Allocated    None Allocated    Yes  
**4070**  
**as a whole**

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**16. Other Information**

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

**Revised:** 6/12/2006

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