



# MSDS

## Material Safety Data Sheet

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)

### 1. Product Identification

**Product Code:**

**V-4458**

**Manufactured By:**

LaMotte Company

**Product Description:**

Sulfide Reagent A

802 Washington Avenue

Chestertown, MD 21620

### 2. Composition/Information on Ingredients

Hazardous	Name	CAS #	%	OSHA PEL	ACGIH TLV
Yes	Sulfuric Acid	7664-93-9	64	1 mg/cubic m	1 mg/cubic m
Yes	N,N-dimethyl-p-phenylenediamine sulfate; (a.k.a. DPD sulfate)	536-47-0	<1	N/E	N/E
No	Water to 100%				

### 3. Hazards Overview

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

**Poison! Danger! Corrosive. Liquid and mist cause severe burns to all body tissue. Ingestion may be fatal. Inhalation can cause coughing, chest pains, damage to lungs.**

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

**Health: 3** Flammability: 0 Reactivity: **3**

**Carcinogenicity:** See Section 11.

#### Other Health Related Comments:

N,N-dimethyl-p-phenylenediamine sulfate is highly toxic. (See Section 11).

### 4. First Aid Measures

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

**Skin Contact:** Immediately flush with water for 15 minutes while removing affected clothing. Call a doctor immediately if skin contact has been extensive or prolonged.

**Ingestion:** Do not induce vomiting. Rinse mouth, drink plenty of water. Call a doctor immediately.

**Inhalation:** Remove to fresh air. Give artificial respiration if not breathing. If breathing is difficult, give oxygen and call a doctor immediately.

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**Product Code:** V-4458

**Product Description:** Sulfide Reagent A

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## 5. Fire Fighting Measures

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

### Fire Rating

**Extinguishing Media:** Dry chemical or CO<sub>2</sub>, not water

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

**Hazardous Combustion and/or Decomposition Products:** SO<sub>x</sub>, hydrogen gas

**Unusual Fire & Explosion Hazard:** Concentrated material is a strong dehydrating agent. Reacts with organic material and may cause ignition of finely divided materials on contact. A violent exothermic reaction occurs with water. Reacts with metals to produce hydrogen gas which can form an explosive mixture with air.

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## 6. Accidental Release Measures

Wear gloves, eye and skin protection. Cover spill with sodium bicarbonate or soda ash/calcium hydroxide mixture. Mix and carefully add water to form slurry, avoiding heat, spattering, and fumes. Scoop up neutralized slurry and flush to drain with excess water.

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## 7. Handling & Storage

Store in cool, dry, ventilated storage with acid resistant floors and good drainage. Keep out of direct sunlight and away from heat, water, and such incompatible materials as combustibles, strong bases, metals, cyanides, and sulfides.

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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    Labcoat    Other: rubber or vinyl apron, face shield to avoid body splashes.

**Work/Hygienic Practices:** Avoid contact with skin and clothing. Do not breathe mist or vapor.

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## 9. Physical & Chemical Properties

<b>Appearance:</b>	Colorless Clear Liquid	<b>Boiling Point:</b>	ca. 290 degC
		<b>Melting Point:</b>	N/A
		<b>pH:</b>	<1
<b>Odor:</b>	None	<b>Vapor Density:</b>	3 (Air=1)
<b>Solubility in Water:</b>	Soluble	<b>Vapor Pressure:</b>	<0.3 @ 20 deg C

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## 10. Stability & Reactivity

**Stable:** Yes

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

**Materials to Avoid:** Organics, combustibles (may cause fire), strong bases, metals (yields hydrogen gas), cyanides (yields poisonous HCN gas), sulfides (yields poisonous H<sub>2</sub>S gas), strong oxidizers and many other reactive substances

**Hazardous Decomposition Products:** SO<sub>x</sub>, hydrogen gas

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**Product Code: V-4458****Product Description: Sulfide Reagent A**

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**11. Toxicological Information****Oral rat LD50: 2140 mg/kg for sulfuric acid**

Sulfuric acid mists investigated as a tumorigen, mutagen, reproductive effector. IARC has classified “strong inorganic acid mists containing sulfuric acid” as a known human carcinogen, (IARC category 1). This applies to mists—not to liquid sulfuric acid or its solutions.

**DPD sulfate** is highly toxic—and may be fatal if inhaled, swallowed, or absorbed through skin. It causes eye and skin irritation.

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

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**12. Ecological Information**

When released into the soil, sulfuric acid may leach into groundwater. When released into the air, it may be removed from the atmosphere to fall as acid rain or as dry deposition. This material may be toxic to aquatic life.

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**13. Disposal Considerations**

Add very slowly with stirring to a large volume of soda ash and calcium hydroxide. Solution neutralized to pH  $7 \pm 1$  may be poured down drain with excess water. Dispose according to federal, state and local regulations.

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**14. Transport Information**

Domestic:

**Proper Shipping Name:** SULFURIC ACID (with more than 51% acid)

International:

**Proper Shipping Name:** SULPHURIC ACID (with more than 51% acid)

**Hazard Class/Div:** 8

UN1830

**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>		
Sulfuric Acid	Yes	Yes	Yes	No	Yes	Yes
N,N-dimethyl-p-phenylenediamine sulfate	Yes	Yes	Yes	No	Yes	No

Water to 100%

**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>			
Sulfuric Acid	1000	1000	Yes	No	1000	No	No
N,N-dimethyl-p-phenylenediamine sulfate	No	No	No	No	No	No	No
Water to 100%							

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**Product Code:****V-4458****Product Description: Sulfide Reagent A**

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<b>Ingredient</b>	<b>----- SARA 311/312 ----- Hazard Categories</b>	<b>----- Australia -----</b>		<b>This MSDS is WHMIS Compliant</b>
		<b>Hazchem Code</b>	<b>Poison Schedule</b>	
Sulfuric Acid	Acute: Yes Chronic: Yes Fire: No Pressure: No Reactivity: Yes (Pure/Liquid)	2P	None Allocated	
N,N-dimethyl-p- phenylenediamine sulfate	Acute: Yes Chronic: Yes Fire: No Pressure: No Reactivity: No (Pure/Solid)	None Allocated	None Allocated	
Water to 100%				
<b>For product #V-4458 liquid, as a whole</b>	Acute: Yes Chronic: Yes Fire: No Pressure: No Reactivity: Yes	2P	None Allocated	Yes

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**16. Other Information**

Store away from incompatible items (metals, bases, combustible organics, sulfides, cyanides).

**Prepared By:** IP**Revised:** 6/13/2005



# 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:** 4460

**Product Description:** Sulfide Reagent C

**Manufactured By:** LaMotte Company

802 Washington Avenue

Chestertown, MD 21620

### 2. Composition/Information On Ingredients

Hazard	CAS#/Name	%	PEL	TLV
Yes	7783-28-0 Ammonium Phosphate Dibasic	40	N/E	N/E
No	7732-18-5 Water	to 100%		

### 3. Hazards Overview

**Primary Route Of Entry:** Skin Ingestion

Large doses by mouth can cause GI irritation. May irritate eyes and skin.

#### 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:** 4460

**Product Description:** Sulfide Reagent C

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

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

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

**Ingestion:** Drink plenty of water. Consult a physician.

**Inhalation:** N/A

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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:** N/A

**Unusual Fire & Explosion Hazard:** May release ammonia or NOx under fire conditions

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

Mop up with paper towels.

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

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

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

### **Ventilation**

Normal

### **Protection When Handling**

Gloves Eye Protection Lab Coat

**Work/Hygenic Practices:** Avoid contact with skin.

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

<b>Appearance:</b>	Clear Colorless Liquid	<b>Vapor Density:</b>	<1 (Air=1)
<b>Solubility In Water:</b>	Soluble	<b>Vapor Pressure:</b>	Unknown
<b>Odor:</b>	None	<b>Boiling Point:</b>	Unknown
<b>pH:</b>	8	<b>Melting Point:</b>	Unknown

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## **10. Stability & Reactivity**

<b>Stable:</b>	Yes
<b>Conditions To Avoid:</b>	Heating to decomposition
<b>Incompatibility (Materials To Avoid):</b>	Strong alkali
<b>Hazardous Decomposition Products:</b>	Reaction with strong base causes emission of ammonia.

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## **11. Toxicological Information**

Oral woman LDLo: 800 mg/kg for Ammonium Phosphate Dibasic solid

**Target Organs:** Skin

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**Product Code:** 4460

**Product Description:** Sulfide Reagent C

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## **12. Ecological Information**

Information Not Yet 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. Transportation Information**

Not Regulated For Transport

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## **15. Regulatory Information**

### **Chemical Inventory Status**

Hazard	Ingredient	USA	Europe	--- Canada ---		Australia	Japan
		TSCA	EC	DSL	NDSL		
Yes	7783-28-0 Ammonium Phosphate Dibasic	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			
7783-28-0 Ammonium Phosphate Dibasic	No	No	No	No	No	No	No
7732-18-5 Distilled Water	No	No	No	No	No	No	No



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**Product Code:** 4460

**Product Description:** Sulfide Reagent C

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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 Code</b>	<b>Poison Schedule</b>	<b>This MSDS Is WHMIS Compliant</b>
7783-28-0 Ammonium Phosphate Dibasic	Yes	No	No	No	No	None Allocated	None Allocated	
7732-18-5 Distilled Water	No	No	No	No	No	None Allocated	None Allocated	
<b>product 4460 as a whole</b>	Yes	No	No	No	No	None Allocated	None Allocated	Yes

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**16. Other Information**

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

**Revised:** 12/19/2005

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# MSDS

## Material Safety Data Sheet

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)

### 1. Product Identification

**Product Code:**

**V-4459**

**Manufactured By:**

LaMotte Company

**Product Description:**

Sulfide Reagent B

802 Washington Avenue

Chestertown, MD 21620

### 2. Composition/Information on Ingredients

Hazardous	Name	CAS #	%	OSHA PEL	ACGIH TLV
Yes	Ferric Chloride hexahydrate	10025-77-1	25 w/w	1 mg/cubic m (as Fe)	1 mg/cubic m (as Fe)
No	Water to 100%	7732-18-5			

### 3. Hazards Overview

**Primary Route of Entry:** Inhalation Skin

**Danger! Corrosive. Causes burns to any area of contact. Harmful if swallowed or inhaled. Vapors destructive to mucous membranes and upper respiratory tract.**

**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:**

Ferric chloride investigated as a mutagen, reproductive effector. Affects the liver. (See Section 11)

### 4. First Aid Measures

**Eye Contact:** Immediately flush with water for 15 minutes. Get medical attention

**Skin Contact:** Immediately flush with water for 15 minutes while removing affected clothing. Wash skin with soap and water. Get medical attention if skin is irritated or burned.

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

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

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**Product Code:** V-4459

**Product Description:** Sulfide Reagent B

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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:** Wear protective equipment and self-contained breathing apparatus.

**Hazardous Combustion and/or Decomposition Products:** Hydrogen chloride gas

**Unusual Fire & Explosion Hazard:** Emits toxic and corrosive fumes under fire conditions.

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### 6. Accidental Release Measures

Cover spill with sodium bicarbonate. Carefully scoop up and flush down drain with excess water.

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### 7. Handling & Storage

Keep in a tightly closed container in a cool, ventilated area away from such incompatibles as strong alkali.

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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.

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### 9. Physical & Chemical Properties

<b>Appearance:</b>	Dark Amber Liquid	<b>Boiling Point:</b>	dec. @ 300 deg C
		<b>Melting Point:</b>	N/A
		<b>pH:</b>	<1
<b>Odor:</b>	hydrochloric acid	<b>Vapor Density:</b>	Unknown
<b>Solubility in Water:</b>	Soluble	<b>Vapor Pressure:</b>	<17 mm @ 20 deg C

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### 10. Stability & Reactivity

**Stable:** Yes

**Conditions to Avoid:** Heat

**Materials to Avoid:** Strong alkali, metals. Will react with water to produce toxic and corrosive fumes

**Hazardous Decomposition Products:** Emits toxic fumes of chloride (or hydrogen chloride gas.) when heated to decomposition.

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### 11. Toxicological Information

**Oral rat LD50:** 450 mg/kg for ferric chloride, anhydrous. Investigated as a mutagen, reproductive effector.

**Target Organs:** Skin   Respiratory System   Eyes   Liver   Corrosive to all body parts

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**Product Code: V-4459**

**Product Description: Sulfide Reagent B**

**12. Ecological Information**

Information not Available

**13. Disposal Considerations**

Neutralize with sodium bicarbonate or dilute ammonia to pH 6-7. Pour neutralized solution down drain with excess water. Dispose according to federal, state and local regulations.

**14. Transport Information**

**Proper Shipping Name: FERRIC CHLORIDE SOLUTION**

**Hazard Class/Div: 8**

**UN2582**

**Packing Group: III**

**15. Regulatory Information**

**Chemical Inventory Status**

<b>Ingredient</b>	<b>USA TSCA</b>	<b>Europe EC</b>	<b>---Canada---</b> <b>DSL NDSL</b>		<b>Australia</b>	<b>Japan</b>
Ferric Chloride anhydrous (7705-08-0)	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</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>
Ferric Chloride anhydrous (7705-08-0)	No	No	No	No	1000	No	No

Water to 100%

<b>Ingredient</b>	<b>----- SARA 311/312 -----</b> <b>Hazard Categories</b>			<b>----- Australia -----</b> <b>Hazchem Code</b>		<b>Poison Schedule</b>	<b>This MSDS is WHMIS Compliant</b>
Ferric Chloride anhydrous (7705-08-0)	Acute: Yes	Chronic: No	Fire: No	2R		None Allocated	
	Pressure: No	Reactivity: No	(Pure/solid)				
<b>For #V-4459 liquid mixture, as a whole</b>	Acute: Yes	Chronic: No	Fire: No	2R		None Allocated	Yes
	Pressure: No	Reactivity: No					

**16. Other Information**

**Prepared By: IP**

**Revised: 6/15/2005**

# MATERIAL SAFETY DATA SHEET

LaMOTTE COMPANY  
PO BOX 329 - CHESTERTOWN - MARYLAND - 21620  
TELEPHONE # FOR INFORMATION 410-778-3100

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

## 1. PRODUCT IDENTIFICATION

Sulfide Reagent B

Code Nr. 4459

## 2. HAZARDOUS INGREDIENTS

NAME	CAS #	TSCA #	%	PEL	TLV
Ferric Chloride hexahydrate	10025-77-1	7705-08-0	25 w/w	1 mg/cubic m (as Fe)	1 mg/cubic m (as Fe)

## 3. NON-HAZARDOUS INGREDIENTS EXCEPT WATER (7732-18-5)

NAME	CAS #	%
Water to 100%		

## 4. PHYSICAL DATA

<i>Appearance:</i> Dark Amber Liquid			
<i>Solubility in Water:</i> Soluble	<i>Odor:</i> None	<i>Boiling Point:</i> d. @300deg C	<i>Melt. Point:</i> N/A
<i>Vapor Pressure:</i> Unknown	<i>Vapor Density:</i> Unknown	<i>pH:</i> <1	

## 5. FIRE AND EXPLOSION DATA

<i>Flash Point (method used)</i> N/A	<i>Flammable Limit: LEL:</i> N/A	<i>UEL:</i> N/A
<i>Extinguishing Media:</i> Not a fire hazard		
<i>HMIS Hazard: Health - 2 Flammability - 0 Reactivity - 1</i> Scale: 4 = Extreme, 3 = High, 2 = Moderate, 1 = Slight, 0 = Least		
<i>Special Fire Fighting Procedures:</i> Wear protective equipment and self-contained breathing apparatus.		
<i>Unusual Fire &amp; Explosion Hazard:</i> Emits toxic fumes under fire conditions.		

## 6. REACTIVITY DATA

<i>Stability:</i>	<i>Conditions to avoid:</i> Heat
<input checked="" type="checkbox"/> <i>Stable</i>	<i>Incompatibility (Materials to avoid):</i> Alkalies, oxidizers, strong acids (nitric or sulfuric), metals
<input type="checkbox"/> <i>Unstable</i>	<i>Hazardous Decomposition Products:</i> Hydrogen chloride gas

## 7. HEALTH HAZARD DATA

<i>Toxicity:</i> Unknown	
<i>Primary Route of Entry:</i> <input checked="" type="checkbox"/> <i>Inhalation</i> <input checked="" type="checkbox"/> <i>Skin</i> <input type="checkbox"/> <i>Ingestion</i> <input type="checkbox"/> <i>N/A</i>	<i>Carcinogenicity:</i> <input checked="" type="checkbox"/> <i>None</i> <input type="checkbox"/> <i>NTP</i> <input type="checkbox"/> <i>OSHA</i> <input type="checkbox"/> <i>IARC</i>
<i>Other Health Related Comments:</i>	
<i>Target Organs:</i> Corrosive to all body parts, Eyes, Liver, Skin, Respiratory System	
<i>Signs and symptoms of exposure:</i> Can cause severe burns to eyes and skin. Harmful if swallowed.	
<i>Medical Condition Aggravated by Exposure:</i> N/A	

## 8. EMERGENCY FIRST AID PROCEDURES

<i>Eye Contact:</i> Immediately flush with water for at least 15 minutes. Consult physician.
<i>Ingestion:</i> Rinse out mouth. Drink plenty of water. Call a physician immediately.
<i>Inhalation:</i> Remove to fresh air.
<i>Skin Contact:</i> Immediately flush with water for 15 minutes while removing affected clothing. Wash skin with soap and water.

## 9. SPILL AND DISPOSAL PROCEDURES

<i>Spill and Leak:</i> Wear gloves & eye protection. Cover spill with sodium bicarbonate. Carefully scoop up and flush down drain with excess water.
<i>Disposal:</i> Neutralize with sodium bicarbonate or dilute ammonia. Pour neutralized solution down drain with excess water. Dispose according to federal, state and local regulations.

## 10. PRECAUTIONARY MEASURES

<i>In Handling:</i> <input checked="" type="checkbox"/> <i>Gloves</i> <input checked="" type="checkbox"/> <i>Eye Protection</i> <input type="checkbox"/> <i>N/A</i> <input checked="" type="checkbox"/> <i>Other:</i> Lab Coat
<i>Ventilation</i> <input checked="" type="checkbox"/> <i>Normal</i> <input type="checkbox"/> <i>Mechanical</i> <input type="checkbox"/> <i>Respiratory Protection</i>
<i>Work/Hygiene Practices:</i> Avoid contact with skin and clothing. Use with adequate ventilation.

## 11. SPECIAL PRECAUTIONS

Store away from strong alkalies.
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**DATE:** 4/19/04 The above information is believed to be correct but does not claim to be all inclusive and should be used only as a guide.

▲ This is a toxic chemical subject to reporting requirements of section 313 of EPCRA and 40CFR372.



# 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:** 4458

**Product Description:** Sulfide Reagent A

**Manufactured By:** LaMotte Company

802 Washington Avenue

Chestertown, MD 21620

### 2. Composition/Information On Ingredients

Hazard	CAS#/Name	%	PEL	TLV
Yes	7664-93-9 Sulfuric Acid	64	1 mg/cubic m	1 mg/cubic m
Yes	536-47-0 N,N-dimethyl-p-phenylenediamine sulfate	<1	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. Ingestion may be fatal. Reacts with water, bases, and other materials.

#### HMIS Hazard

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

Health: 3      Flammability: 0      Reactivity: 3

**Carcinogenicity:** Yes: IARC

#### **Other Health Related Comments:**

See Section 11.

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

**Eye Contact:** Immediately flush with water for at least 15 minutes. Immediately call a doctor.

**Skin Contact:** Immediately flush with water for at least 15 minutes, while removing affected clothing. Consult physician.

**Ingestion:** Do not induce vomiting. Rinse mouth, drink plenty of water. Call a physician immediately.

**Inhalation:** Remove to fresh air. Give artificial respiration if not breathing. 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:** Dry chemical or CO<sub>2</sub>, not water

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

**Unusual Fire & Explosion Hazard:** A violent exothermic reaction occurs with water. Reacts with metals to produce hydrogen gas which can form an explosive mixture with air.

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

Use gloves & eye protection. Cover spill with sodium bicarbonate or sodium carbonate & calcium hydroxide mixture. Mix and carefully add water to form slurry, avoiding heat, spattering and fumes. Scoop up, flush to drain with excess water

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

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

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

### **Ventilation**

Mechanical

### **Protection When Handling**

Eye Protection Gloves labcoat, respirator

non-latex gloves

face shield

**Work/Hygenic Practices:** Avoid contact with skin and clothing. Don't breathe vapor. Respirator w/ acid gas & dust/mist filters

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

**Appearance:** Clear Colorless Liquid

**Solubility In Water:** Soluble

**Odor:** None

**pH:** <1

**Vapor Density:** 3 (Air=1)

**Vapor Pressure:** <0.3 mm Hg @ 20 deg C

**Boiling Point:** ca. 290 deg C

**Melting Point:** N/A

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## **10. Stability & Reactivity**

**Stable:** Yes

**Conditions To Avoid:** Heat, light, moisture

**Incompatibility (Materials To Avoid):** Water, metals, organic or combustible materials, and strong bases.

**Hazardous Decomposition Products:** SOx, hydrogen gas

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## **11. Toxicological Information**

oral rat LD50: 2140 mg/Kg for sulfuric acid. H2SO4 mists investigated as a tumorigen, mutagen, reproductive effector. IARC has classified "strong inorganic mists contain. sulfuric acid" as a known human carcinogen. This applies to mists--not liquid acid

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

**Pre-Existing Conditions Aggravated By Exposure:** Respiratory ailments.

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**Product Code:** 4458

**Product Description:** Sulfide Reagent A

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## **12. Ecological Information**

Information Not Yet Available

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## **13. Disposal Considerations**

Add very slowly with stirring to a large volume of sodium carbonate/calcium hydroxide. Pour neutralized solution down drain with excess water. Dispose according to federal, state and local regulations.

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## **14. Transportation Information**

### **Proper Shipping Name:**

**DOT:** SULFURIC ACID (>51%ACID)

**IATA:** SULPHURIC ACID  
>51% ACID

### **Hazard Class/Div:**

**DOT:** 8

**IATA:** 8

**UN:** 1830

**Packing Group:** II

---

## **15. Regulatory Information**

### **Chemical Inventory Status**

Hazard	Ingredient	USA	Europe	--- Canada ---		Australia	Japan
		TSCA	EC	DSL	NDSL		
Yes	7664-93-9 Sulfuric Acid	Yes	Yes	Yes	No	Yes	Yes
Yes	536-47-0 N,N-dimethyl-p-phenylenediamine sulfate	Yes	Yes	Yes	No	Yes	No
No	7732-18-5 Distilled Water	Yes	Yes	Yes	No	Yes	Yes

---

**Product Code:** 4458

**Product Description:** Sulfide Reagent A

---

**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>			
7664-93-9 Sulfuric Acid	1000	1000	Yes	No	1000	No	No
536-47-0 N,N-dimethyl-p-phenylenediamine sulfate	No	No	No	No	No	No	No
7732-18-5 Distilled Water	No	No	No	No	No	No	No

---

**Product Code:** 4458

**Product Description:** Sulfide Reagent A

---

--- SARA 311/312 ---

**Hazard Categories**

----- Australia -----

**Hazchem  
Code**

**Poison  
Schedule**

**This MSDS Is  
WHMIS Compliant**

**Ingredient**

**Acute**

**Chronic**

**Fire**

**Pressure**

**Reactivity**

7664-93-9  
Sulfuric Acid

Yes

Yes

No

No

Yes

2P

None Allocated

536-47-0  
N,N-dimethyl-p-phenylenediamine sulfate

Yes

Yes

No

No

No

None Allocated

None Allocated

7732-18-5  
Distilled Water

No

No

No

No

No

None Allocated

None Allocated

**product  
4458  
as a whole**

Yes

Yes

No

No

Yes

2P

None Allocated

Yes

---

**16. Other Information**

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

**Revised:** 5/12/2006

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# 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:** 4635

**Product Description:** Sulfide Test Solution #3

**Manufactured By:** LaMotte Company

802 Washington Avenue

Chestertown, MD 21620

### 2. Composition/Information On Ingredients

Hazard	CAS#/Name	%	PEL	TLV
Yes	10025-77-1 Ferric Chloride Hexahydrate	50	1 mg/cubic m as Fe	1 mg/cubic m as Fe
No	7732-18-5 Water	to 100%		

### 3. Hazards Overview

**Primary Route Of Entry:** Skin Ingestion

Danger! Corrosive. Can cause severe irritation or burns to eyes, skin, and lungs. Harmful or fatal 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:** 4635

**Product Description:** Sulfide Test Solution #3

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

**Eye Contact:** Immediately flush with water for at least 15 minutes. Get prompt medical attention.

**Skin Contact:** Immediately flush skin with water for at least 15 minutes while removing affected clothing and shoes. Consult physician.

**Ingestion:** Do not induce vomiting. Rinse out mouth. Drink glass 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:** N/A

**Unusual Fire & Explosion Hazard:** Emits toxic fumes under fire conditions.

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

Wear gloves and eye protection. Cover spill with sodium bicarbonate. Carefully scoop up and flush neutralized material down drain with excess water.

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

Store container tightly closed in cool, dry, ventilated area away from incompatible materials (strong bases, metals, sulfides, and cyanides). Keep out of reach of children.

---

## **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:** Dark Amber Liquid

**Solubility In Water:** Soluble

**Odor:** None

**pH:** <1

**Vapor Density:** Unknown

**Vapor Pressure:** <15 mm Hg @ 20 deg C

**Boiling Point:** Unknown

**Melting Point:** Unknown

---

## **10. Stability & Reactivity**

**Stable:** Yes

**Conditions To Avoid:** Heat

**Incompatibility (Materials To Avoid):** Alkalies, oxidizers, metals

**Hazardous Decomposition Products:** Hydrogen Chloride fumes

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## **11. Toxicological Information**

Oral rat LD50: 316 mg/kg (ferric chloride anhydrous); investigated as a mutagen, reproductive effector. Ingestion may cause liver damage (iron poisoning).

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

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**Product Code:** 4635

**Product Description:** Sulfide Test Solution #3

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## 12. Ecological Information

Information Not Yet Available

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## 13. Disposal Considerations

In fume hood, neutralize with sodium bicarbonate or dilute ammonia. Pour neutralized solution down drain with excess water. Dispose according to federal, state and local regulations.

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## 14. Transportation Information

**Proper Shipping Name:**

**DOT:** FERRIC CHLORIDE SOLUTION

**IATA:** FERRIC CHLORIDE SOLUTION

**Hazard Class/Div:**

**DOT:** 8

**IATA:** 8

**UN:** 2582

**Packing Group:** III

---

## 15. Regulatory Information

### Chemical Inventory Status

Hazard	Ingredient	USA	Europe	--- Canada ---		Australia	Japan
		TSCA	EC	DSL	NDSL		
Yes	7705-08-0 Ferric Chloride anhydrous	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			
7705-08-0 Ferric Chloride anhydrous	No	No	No	No	1000	No	No
7732-18-5 Distilled Water	No	No	No	No	No	No	No

---

**Product Code:** 4635

**Product Description:** Sulfide Test Solution #3

---

--- SARA 311/312 ---

----- Australia -----

**Hazard Categories**

<b>Ingredient</b>	<b>Acute</b>	<b>Chronic</b>	<b>Fire</b>	<b>Pressure</b>	<b>Reactivity</b>	<b>Hazchem Code</b>	<b>Poison Schedule</b>	<b>This MSDS Is WHMIS Compliant</b>
7705-08-0 Ferric Chloride anhydrous	Yes	No	No	No	No	2R	None Allocated	
7732-18-5 Distilled Water	No	No	No	No	No	None Allocated	None Allocated	
<b>product 4635 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:** 9/7/2006

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