



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: V-4466

Product Description: Silica Reagent #1 (TRL)

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	20	C 5 ppm	C 2 ppm
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: 3 Flammability: 0 Reactivity: 2

Carcinogenicity: None:

Other Health Related Comments:

Product Code: V-4466

Product Description: Silica Reagent #1 (TRL)

4. First Aid Measures

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

Skin Contact: Immediately flush w/ water for at least 15 minutes while removing affected clothing. Wash skin with soap & water. Consult a physician.

Ingestion: Do not induce vomiting. Rinse out mouth. Drink plenty of water. Call a physician immediately.

Inhalation: Remove to fresh air. Give artificial respiration if breathing has stopped. If breathing is difficult, give oxygen.

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.

6. Accidental Release Measures

Wear gloves and eye protection. Cover with sodium bicarbonate or soda ash/calcium hydroxide mixture. Mix and carefully add water to form slurry. Scoop up and wash down drain with excess water.

7. Handling & Storage

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

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

Mechanical Respiratory

With larger quantities, work in chemical fume hood to avoid inhalation.

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:** Slight chlorine**pH:** <1**Vapor Density:** 1.3 (Air=1)**Vapor Pressure:** Unknown**Boiling Point:** 110 deg C**Melting Point:** N/A

10. Stability & Reactivity**Stable:** Yes**Conditions To Avoid:** Heat**Incompatibility (Materials To Avoid):** Metals, strong caustics, sulfides and sulfites. Contact with metals causes formation of flammable and explosive hydrogen gas.**Hazardous Decomposition Products:** HCl gas

11. Toxicological Information

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

Target Organs: Corrosive to all body parts Respiratory System Skin

Product Code: V-4466

Product Description: Silica Reagent #1 (TRL)

12. Ecological Information

When released into the soil, this material is not expected to biodegrade. It may leach into groundwater. This material is expected to be toxic to aquatic life.

13. Disposal Considerations

Wear gloves and eye protection. Add very slowly with stirring to a large volume of soda ash & calcium hydroxide. 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: II

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: V-4466

Product Description: Silica Reagent #1 (TRL)

--- SARA 311/312 ---

Hazard Categories

----- Australia -----

**Hazchem
Code**

**Poison
Schedule**

**This MSDS Is
WHMIS Compliant**

Ingredient	Acute	Chronic	Fire	Pressure	Reactivity			
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	
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product V-4466 as a whole	Yes	Yes	No	No	No	2R	None Allocated	Yes
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16. Other Information

Prepared By: IP, Regulatory Affairs Department

Revised: 5/12/2006



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-4468

Product Description:

Silica Reagent #3

Manufactured By:

LaMotte Company

802 Washington Avenue

Chestertown, MD 21620

2. Composition/Information on Ingredients

Hazardous	Name	CAS #	%	OSHA PEL	ACGIH TLV
Yes	Oxalic Acid, dihydrate	6153-56-6	10	1 mg/cubic m	1 mg/cubic m
No	Water to 100%	7732-18-5	90		

3. Hazards Overview

Primary Route of Entry: Ingestion Skin

Poison! Danger! May be fatal if swallowed. Corrosive. Causes severe irritation and burns to skin, eyes, and respiratory tract. Very toxic, primary skin irritant. Harmful if inhaled or absorbed through skin.

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: (See Section 11.)

4. First Aid Measures

Eye Contact: Flush thoroughly with water for 15 minutes. Get prompt medical advice.

Skin Contact: In case of contact, wipe off excess from skin then immediately flush skin thoroughly with water for at least 15 minutes while removing contaminated clothing and shoes. Wash with soap and water. Consult physician.

Ingestion: Rinse out mouth. Do not induce vomiting. Drink several glasses of milk or water. Call a doctor immediately!

Inhalation: Remove to fresh air. If symptoms of respiratory irritation appear, call a doctor.

5. Fire Fighting Measures

Oxalic Acid is a combustible solid below 101C (215F)

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: May form CO, CO₂, when heated to decomposition. May also form formic acid.

Unusual Fire & Explosion Hazard: N/A

Product Code: V-4468

Product Description: Silica Reagent #3

6. Accidental Release Measures

Wear appropriate personal protective equipment: gloves, safety glasses, body-covering clothing. Cover contaminated surfaces with soda ash or sodium bicarbonate to neutralize the acid. Scoop up neutralized slurry and wash down drain with excess water.

7. Handling & Storage

Store in a cool, ventilated area away from sources of heat and incompatibles.

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. Wash after handling.

9. Physical & Chemical Properties

Appearance:	Colorless Clear Liquid	Boiling Point:	Unknown
		Melting Point:	N/A
		pH:	1
Odor:	None	Vapor Density:	Unknown
Solubility in Water:	Soluble	Vapor Pressure:	<17 mm @ 20 deg C

10. Stability & Reactivity

Stable: Yes
Conditions to Avoid: N/A
Materials to Avoid: Finely powdered metals and silver compounds, strong reducers and bases, oxidizing agents and hypochlorites (bleaches).

Hazardous Decomposition Products: CO_x, formic acid

11. Toxicological Information

Oral rat LD50: 375 mg/kg for oxalic acid. Very toxic. Oxalic acid is corrosive to tissue. When ingested, oxalic acid removes calcium from the blood. May cause kidney damage as calcium is removed from the blood in the form of calcium oxalate. The calcium oxalate then obstructs the kidney tubules. Investigated as a reproductive effector.

Target Organs: Corrosive to all body parts

12. Ecological Information

Information not Available

13. Disposal Considerations

Neutralize with sodium bicarbonate or soda ash. Scoop up slurry and wash down drain with excess water. Dispose according to federal, state and local regulations.

Product Code: V-4468

Product Description: Silica Reagent #3

14. Transport Information

Proper Shipping Name: CORROSIVE LIQUID, ACIDIC, ORGANIC N.O.S. (10% OXALIC ACID DIHYDRATE)

Hazard Class/Div: 8

UN3265

Packing Group: II

15. Regulatory Information

Chemical Inventory Status

Ingredient	USA TSCA	Europe EC	---Canada--- DSL NDSL		Australia	Japan
Oxalic Acid, anhydrous (144-62-7)	Yes	Yes	Yes	No	Yes	Yes

Water to 100%

Federal, State, & International Regulations

Ingredient	---SARA 302---		----- SARA 313 -----			RCRA	TSCA
	RQ	TPQ	Listed	Chemical Category	CERCLA	261.33	8(D)
Oxalic Acid, anhydrous (144-62-7)	No	No	No	No	No	No	No

Water to 100%

Ingredient	----- SARA 311/312 ----- Hazard Categories	----- Australia ----- Hazchem Code Poison Schedule		This MSDS is WHMIS Compliant
Oxalic Acid, anhydrous (144-62-7)	Acute: Yes Chronic: Yes Fire: No Pressure: No Reactivity: No (Pure/solid)	2X	S6	

Water to 100%

For #V-4468 liquid mixture, taken as a whole	Acute: Yes Chronic: Yes Fire: No Pressure: No Reactivity: No (Liquid/mixture)	2X	S6	YES
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16. Other Information

Prepared By: IP

Revised: 6/13/2005



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

Product Code:

V-4467

Product Description:

Silica Reagent #2

Manufactured By:

LaMotte Company

802 Washington Avenue

Chestertown, MD 21620

2. Composition/Information on Ingredients

Hazardous	Name	CAS #	%	OSHA PEL	ACGIH TLV
Yes	Ammonium Molybdate tetrahydrate	12054-85-2	10	5 mg/cubic m as Mo	5 mg/cubic m as Mo
Yes	Potassium Hydroxide	1310-58-3	2.4	C 2 mg/cubic m	C 2 mg/cubic m
No	Water to 100%	7732-18-5			

3. Hazards Overview

Primary Route of Entry: Skin

Warning! May be irritating to 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:

4. First Aid Measures

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

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

Ingestion: Rinse out mouth. Drink glass of water. Consult a 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

Product Code: V-4467

Product Description: Silica Reagent #2

6. Accidental Release Measures

Pour down drain with excess water.

7. Handling & Storage

Store in cool, dry area away from heat and incompatible materials.

8. Exposure Controls/Personal Protection

Ventilation

Use with adequate ventilation.

Protection When Handling

Gloves Eye Protection Lab Coat

Work/Hygienic Practices: Avoid repeated contact with skin and clothing.

9. Physical & Chemical Properties

Appearance:	Colorless slightly cloudy or clear Liquid	Boiling Point:	>100 deg C
		Melting Point:	N/A
		pH:	8
Odor:	None	Vapor Density:	Unknown
Solubility in Water:	Soluble	Vapor Pressure:	Unknown

10. Stability & Reactivity

Stable:	Yes
Conditions to Avoid:	N/A
Materials to Avoid:	N/A

Hazardous Decomposition Products: N/A

11. Toxicological Information

Oral rat LD50: 333 mg/kg for ammonium molybdate anhydrous. Investigated as a mutagen.

Target Organs: Ammonium molybdate can affect blood, kidneys

12. Ecological Information

Information not Available

13. Disposal Considerations

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

14. Transport Information

Not regulated for transport.

Product Code: V-4467

Product Description: Silica Reagent #2

15. Regulatory Information

Chemical Inventory Status

Ingredient	USA	Europe	---Canada---		Australia	Japan
	TSCA	EC	DSL	NDSL		
Ammonium Molybdate, anhydrous (12027-67-7)	Yes	Yes	Yes	No	Yes	Yes
Potassium Hydroxide	Yes	Yes	Yes	No	Yes	Yes
Water to 100%						

Federal, State, & International Regulations

Ingredient	---SARA 302---		----- SARA 313 -----			RCRA 261.33	TSCA 8(D)
	RQ	TPQ	Listed	Chemical Category	CERCLA		
Ammonium Molybdate, anhydrous (12027-67-7)	No	No	No	No	No	No	No
Potassium Hydroxide	No	No	No	No	1000	No	No
Water to 100%							

Ingredient	----- SARA 311/312 -----			----- Australia -----		This MSDS is WHMIS Compliant
	Hazard Categories			Hazchem Code	Poison Schedule	
Ammonium Molybdate (12027-67-7)	Acute: Yes	Chronic: Yes	Fire: No	None	None	Allocated
	Pressure: No	Reactivity: No	(Pure/Solid)	Allocated		
Potassium Hydroxide	Acute: Yes	Chronic: Yes	Fire: No	2R	S6	
	Pressure: No	Reactivity: Yes	(Pure/Solid)			
Water to 100%						
For #V-4467 liquid mixture, as a whole	Acute: Yes	Chronic: Yes	Fire: No	None	None	Allocated
	Pressure: No	Reactivity: No	(Mixture/Liquid)	Allocated		

16. Other Information

Prepared By: IP

Revised: 6/13/2005



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MSDS

Material Safety Data Sheet

1. Product Identification

Product Code:

V-6284

Product Description:

Silica Reagent #4

Manufactured By:

LaMotte Company

802 Washington Avenue

Chestertown, MD 21620

2. Composition/Information on Ingredients

Hazardous	Name	CAS #	%	OSHA PEL	ACGIH TLV
Yes	D(-)-Isoascorbic Acid; D-Araboascorbic acid	89-65-6	10	N/E	N/E
No	Sucrose	57-50-1	90	15 mg/cubic m (total dust)	10 mg/cubic m (total dust)

3. Hazards Overview

Primary Route of Entry: Inhalation

Dust may irritate eyes, skin, respiratory tract.

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

Health: 1 Flammability: 1 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: Rinse skin. Wash with soap and water.

Ingestion: Rinse out mouth. Drink plenty of water. Consult a physician if symptoms develop.

Inhalation: Remove to fresh air.

5. Fire Fighting Measures

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

Fire Rating

Extinguishing Media: Water spray

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

Hazardous Combustion and/or Decomposition Products: CO_x

Unusual Fire & Explosion Hazard: Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Emits toxic fumes under fire conditions. Contact with chemically active metals(Al, Zn, Mg, Cu) can generate flammable hydrogen gas.

Product Code: V-6284

Product Description: Silica Reagent #4

6. Accidental Release Measures

Avoid raising dust. Sweep up, dissolve in water. Wash down drain with excess water.

7. Handling & Storage

Store tight closed in cool, dry, ventilated area, away from incompatibles.

8. Exposure Controls/Personal Protection

Ventilation

Use with adequate ventilation.

Protection When Handling

Gloves Eye Protection Lab Coat

Work/Hygienic Practices: Avoid skin contact and inhalation of powder. Wash after handling.

9. Physical & Chemical Properties

Appearance:	White Powder	Boiling Point:	N/A
		Melting Point:	165-185C decomposes
		pH:	2-3 (0.1g/10mL water)
Odor:	None	Vapor Density:	N/A
Solubility in Water:	Soluble	Vapor Pressure:	N/A

10. Stability & Reactivity

Stable:	Yes
Conditions to Avoid:	Heat, flame, ignition sources, moisture and incompatibles.
Materials to Avoid:	strong oxidizers, bases, sulfuric and nitric acids, chemically active metals (aluminum, copper, magnesium, zinc)

Hazardous Decomposition Products: CO_x, irritating fumes.

11. Toxicological Information

Oral rat LD50: 29700 mg/kg for sucrose. Investigated as a mutagen, reproductive effector.

D-Araboascorbic Acid investigated as a mutagen.

In normal and recommended use product #V-6284 is **non-toxic**.

Target Organs: N/A

12. Ecological Information

Information not Available

13. Disposal Considerations

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

14. Transport Information

Not regulated for transport

Product Code: V-6284

Product Description: Silica Reagent #4

15. Regulatory Information

Chemical Inventory Status

Ingredient	USA	Europe	---Canada---		Australia	Japan
	TSCA	EC	DSL	NDSL		
D(-)-Isoascorbic Acid	Yes	Yes	Yes	No	Yes	Yes
Sucrose	Yes	Yes	Yes	No	Yes	No

Federal, State, & International Regulations

Ingredient	---SARA 302---		----- SARA 313 -----			RCRA 261.33	TSCA 8(D)
	RQ	TPQ	Listed	Chemical Category	CERCLA		
D(-)-Isoascorbic Acid	No	No	No	No	No	No	No
Sucrose	No	No	No	No	No	No	No

Ingredient	----- SARA 311/312 -----			----- Australia -----		This MSDS is WHMIS Compliant
	Hazard Categories			Hazchem Code	Poison Schedule	
D(-)-Isoascorbic Acid	Acute: Yes	Chronic: No	Fire: No	None	None	Allocated
	Pressure: No	Reactivity: No	(Pure/Solid)	Allocated		
Sucrose	Acute: No	Chronic: No	Fire: Yes	None	None	Allocated
	Pressure: No	Reactivity: No	(Pure/Solid)	Allocated		
For product #V-6284 mixture, as a whole	Acute: No	Chronic: No	Fire: Yes	None	None	Allocated
	Pressure: No	Reactivity: No		Allocated		Yes

16. Other Information

Prepared By: IP

Revised: 6/16/2005