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

1. Product Identification

Product Code: **V-6278**
Product Description: Mixed Acid Reagent

Manufactured By: LaMotte Company
802 Washington Avenue
Chestertown, MD 21620

2. Composition/Information on Ingredients

Hazardous	Name	CAS #	%	OSHA PEL	ACGIH TLV
Yes	Acetic Acid, glacial	64-19-7	2	10 ppm	10 ppm
Yes	Copper Sulfate, 5-hydrate	7758-99-8	<0.1	1 mg/cubic m as Cu	1 mg/cubic m as Cu
Yes	Ammonium Chloride	12125-02-9	17	10 mg/cubic m	10 mg/cubic m
Yes	Sodium Phosphate, Dibasic	7558-79-4	2	N/E	N/E
Yes	Sodium Chloride	7647-14-5	10	N/E	N/E
Yes	Citric Acid, anhydrous	77-92-9	4	N/E	N/E
No	Water to 100%	7732-18-5			

3. Hazards Overview

Primary Route of Entry: Ingestion Skin

May be harmful if swallowed. May irritate eyes, skin, respiratory tract.

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 with water for 15 minutes.
Skin Contact: Flush thoroughly with water. Wash with soap and water.
Ingestion: Rinse mouth, drink glass of water. Consult a physician.
Inhalation: Remove to fresh air.

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: Firefighters wear SCBA.
Hazardous Combustion and/or Decomposition Products: ammonia, hydrogen chloride
Unusual Fire & Explosion Hazard: N/A

6. Accidental Release Measures

Neutralize with sodium bicarbonate. Mop up and flush down drain with excess water.

7. Handling & Storage

Store container tightly closed in cool, dry ventilated area.

8. Exposure Controls/Personal Protection

Ventilation

Use with adequate ventilation.

Protection When Handling

Gloves Eye Protection Lab Coat

Work/Hygienic Practices: Wash after handling

9. Physical & Chemical Properties

Appearance:	Blue-green Clear, light Liquid	**Boiling Point:**	> 100 deg C
		Melting Point:	N/A
		pH:	2
Odor:	Vinegar	**Vapor Density:**	<1 (Air=1)
Solubility in Water:	Soluble	**Vapor Pressure:**	< 17 mm@ 20 deg C

10. Stability & Reactivity

Stable: Yes
Conditions to Avoid: Heat
Materials to Avoid: Strong alkali, sulfuric acid

Hazardous Decomposition Products: ammonia, hydrogen chloride

11. Toxicological Information

Oral rat LD50: 300 mg/kg for cupric sulfate, anhydrous. Investigated as a tumorigen and mutagen.
Oral rat LD50: 1650 mg/kg for ammonium chloride, solid
Acetic acid investigated as a mutagen and reproductive effector.
Target Organs: N/A

12. Ecological Information

Information not Available

13. Disposal Considerations

Neutralize with sodium bicarbonate to pH 6-7 and flush down drain with excess water. Dispose according to federal, state and local regulations.

14. Transport Information

Not regulated for transport

15. Regulatory Information

Chemical Inventory Status

	USA	Europe	---Canada---		Australia	Japan
Ingredient	**TSCA**	**EC**	**DSL**	**NDSL**		
Acetic Acid (64-19-7)	Yes	Yes	Yes	No	Yes	Yes
Copper Sulfate, anhydrous (7758-98-7)	Yes	Yes	Yes	No	Yes	Yes
Ammonium Chloride	Yes	Yes	Yes	No	Yes	Yes
Sodium Phosphate, Dibasic	Yes	Yes	Yes	No	Yes	Yes
Sodium Chloride (7647-14-5)	Yes	Yes	Yes	No	Yes	Yes
Citric Acid, anhydrous (77-92-9)	Yes	Yes	Yes	No	Yes	Yes
Water to 100%						

Federal, State, & International Regulations

Ingredient	---SARA 302---- RQ	TPQ	-------- SARA 313 -------- Listed	Chemical Category	CERCLA	RCRA 261.33	TSCA 8(D)
Acetic Acid	No	No	No	No	5000	No	No
Copper Sulfate, anhydrous (7758-98-7)	No	No	No	Copper compounds	10	No	No
Ammonium Chloride (12125-02-9)	No	No	No	No	1000	No	No
Sodium Phosphate, Dibasic	No	No	No	No	5000	No	No
Sodium Chloride	No	No	No	No	No	No	No
Citric Acid, anhydrous	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
Acetic Acid (64-19-7)	Acute: Yes Chronic: Yes Fire: Yes Pressure: No Reactivity: Yes (Pure/Liquid)	2P	S6	
Copper Sulfate, anhydrous (7758-98-7)	Acute: Yes Chronic: Yes Fire: No Pressure: No Reactivity: No (Pure/Solid)	None allocated	S5	
Ammonium Chloride (12125-02-9)	Acute: Yes Chronic: No Fire: No Pressure: No Reactivity: No (Pure/Solid)	None allocated	None allocated	
Sodium Phosphate, Dibasic	Acute: Yes Chronic: No Fire: No Pressure: No Reactivity: No (Pure/Solid)	None allocated	None allocated	
Sodium Chloride	Acute: Yes Chronic: No Fire: No Pressure: No Reactivity: No (Pure/Solid)	None allocated	None allocated	
Citric Acid, anhydrous	Acute: Yes Chronic: No Fire: No Pressure: No Reactivity: No (Pure/Solid)	None allocated	None allocated	
For product #V-6278 liquid mixture, as a whole	Acute: Yes Chronic: No Fire: No Pressure: No Reactivity: No			

16. Other Information

Prepared By: IP

Revised: 3/14/2005

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Telephone Number For Information 410-778-3100
24 Hour Emergency Number (CHEM-TEL) 800-255-3924

MSDS
Material Safety Data Sheet

1. Product Identification

Product Code: **V-6279**
Product Description: Nitrate Reducing Powder

Manufactured By: LaMotte Company
802 Washington Avenue
Chestertown, MD 21620

2. Composition/Information on Ingredients

Hazardous	Name	CAS #	%	OSHA PEL	ACGIH TLV
Yes	Ammonium Chloride	12125-02-9	48	10 mg/cubic m (fume)	10 mg/cubic m (fume)
Yes	Sodium Citrate dihydrate	6132-04-3	32	N/E	N/E
Yes	Manganous Sulfate monohydrate	10034-96-5	10	C 5 mg/cubic m as Mn	C 5 mg/cubic m as Mn
Yes	Cadmium Powder	7440-43-9	7	5 ug/cubic m as Cd	0.01 mg/cubic m total dust
Yes	Sulfanilamide	63-74-1	2	N/E	N/E
Yes	N-1-naphthylenediamine dihydrochloride	1465-25-4	1	N/E	N/E

3. Hazards Overview

Primary Route of Entry: **Inhalation Skin**

Danger! Harmful if inhaled, swallowed or absorbed through skin. Irritating to eyes, skin, respiratory system.

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

Carcinogenicity: Yes: NTP OSHA IARC
Warning! Cadmium is known to cause cancer in humans. (See Section 11.)

Other Health Related Comments:

4. First Aid Measures

Eye Contact: Immediately flush with water for 15 minutes.
Skin Contact: Flush with water. Wash with soap and water.
Ingestion: Rinse out mouth. Drink plenty of water. Consult physician immediately.
Inhalation: Remove to fresh air. Consult physician.

5. Fire Fighting Measures

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

Fire Rating

Extinguishing Media: Dry chemical or CO2
Special Fire Fighting Procedures: Firefighters wear self-contained breathing apparatus
Hazardous Combustion and/or Decomposition Products: Ammonia, hydrogen chloride gas
Unusual Fire & Explosion Hazard: Emits toxic fumes under fire conditions.

6. Accidental Release Measures

Sweep up carefully. Avoid raising/breathing dust. Wear gloves and dust/mist respirator if available. Place waste in plastic bag and enclose in container with lid. Hold for hazardous waste disposal. Ventilate area & wash spill site.

7. Handling & Storage

Store tightly closed in cool, dry location, away from incompatible materials.
Store away from foods, in secure "poison" area.

8. Exposure Controls/Personal Protection

Ventilation

A system of local and/or general exhaust is recommended. Prolonged or frequent handling of laboratory reagents containing finely powdered cadmium metal should be done in a fume hood.

Protection When Handling

Gloves Eye Protection Lab Coat

Work/Hygienic Practices: Use with adequate ventilation. Avoid breathing powder. Do not allow powder to contact skin. Wash after handling.

9. Physical & Chemical Properties

Appearance:	Gray Powder	**Boiling Point:**	N/A
		Melting Point:	Unknown
		pH:	7 (0.1g/10mL water)
Odor:	slight	**Vapor Density:**	N/A
Solubility in Water:	Partially	**Vapor Pressure:**	N/A

10. Stability & Reactivity

Stable:	Yes
Conditions to Avoid:	Moisture, heat, flame, and ignition sources
Materials to Avoid:	Strong acids or bases;other metal powders such as zinc; ammonium nitrate, hydrazoic acid, sodium azide, sulfur
Hazardous Decomposition Products:	Ammonia, hydrogen chloride gas

11. Toxicological Information

Cadmium is a carcinogen & reproductive toxicant. It is listed as "Known to Be a Human Carcinogen" (Group 2A) in **NTP's** 8th Report on Carcinogens, 1998. The finding is supported by previous **IARC** studies in experimental animals (IARC- S.7, 1987). In the U.S.A. cadmium and certain cadmium compounds are regulated by **OSHA** under the Hazard Communication Standard and as chemical hazards in laboratories.

Ammonium chloride: Oral rat LD50: 1650 mg/kg. Investigated as a mutagen.
Manganese sulfate monohydrate: Oral rat LD50: 2150 mg/kg; Anhydrous investigated as a tumorigen, mutagen, reproductive effector. Manganese metal has shown reproductive and teratogenic effects in laboratory animals.
N-1-naphthylenediamine dihydrochloride: Investigated as a tumorigen and mutagen.

Target Organs: Lungs

12. Ecological Information

Information not Available

13. Disposal Considerations

Do not dispose of cadmium-containing waste to sinks and drains. Dispose of as hazardous waste--to incinerator or EPA approved landfill--according to federal, state and local regulations.

14. Transport Information

Domestic:
Proper Shipping Name: CADMIUM COMPOUNDS
International:
Proper Shipping Name: CADMIUM COMPOUND

Hazard Class/Div: 6.1
UN2570
Packing Group: III

15. Regulatory Information

Chemical Inventory Status

	USA	Europe	---Canada---		Australia	Japan
Ingredient	**TSCA**	**EC**	**DSL**	**NDSL**		
Ammonium Chloride (12125-02-9)	Yes	Yes	Yes	No	Yes	Yes
Sodium Citrate, anhydrous (68-04-2)	Yes	Yes	Yes	No	Yes	Yes
Manganese Sulfate, anhydrous (7785-87-7)	Yes	Yes	Yes	No	Yes	Yes
Cadmium (7440-43-9)	Yes	Yes	Yes	No	Yes	Yes
Sulfanilamide (63-74-1)	Yes	Yes	Yes	No	Yes	Yes
N-1-naphthylenediamine dihydrochloride (1465-25-4)	Yes	Yes	Yes	No	Yes	No

Product Code: V-6279 **Product Description:** Nitrate Reducing Powder

Federal, State, & International Regulations

Ingredient	---SARA 302---- RQ	TPQ	-------- SARA 313 --------- Listed	Chemical Category	CERCLA	RCRA 261.33	TSCA 8(D)
Ammonium Chloride (12125-02-9)	No	No	No	No	1000	No	No
Sodium Citrate, anhydrous (68-04-2)	No	No	No	No	No	No	No
Manganese Sulfate, anhydrous (7785-87-7)	No	No	No	Manganese compound	1	No	No
Cadmium (7440-43-9)	No	No	Yes	Cadmium	No	No	Yes
Sulfanilamide (63-74-1)	No	No	No	No	No	No	No
N-1-naphthylenediamine dihydrochloride (1465-25-4)	No	No	No	No	No	No	No

Ingredient	------ SARA 311/312 ------ Hazard Categories	---------- Australia ---------- Hazchem Code	Poison Schedule	This MSDS is WHMIS Compliant
Ammonium Chloride (12125-02-9)	Acute: Yes Chronic: No Fire: No Pressure: No Reactivity: No (Pure/Solid)	None allocated	None allocated	
Sodium Citrate (6132-04-3)	Acute: No Chronic: No Fire: No Pressure: No Reactivity: No (Pure/Solid)	None allocated	None allocated	
Manganese Sulfate, anhydrous (7785-87-7)	Acute: Yes Chronic: Yes Fire: No Pressure: No Reactivity: No (Pure/Solid)	None allocated	None allocated	
Cadmium (7440-43-9)	Acute: Yes Chronic: Yes Fire: No Pressure: No Reactivity: Yes (Pure/Solid)	1[T]	None allocated	
Sulfanilamide (63-74-1)	Acute: Yes Chronic: No Fire: No Pressure: No Reactivity: No (Pure/Solid)	None allocated	None allocated	
N-1-naphthylenediamine dihydrochloride (1465-25-4)	Acute: Yes Chronic: No Fire: No Pressure: No Reactivity: No (Pure/Solid)	None allocated	None allocated	
For #V-6279 product mixture, taken as a whole	Acute: Yes Chronic: Yes Fire: No Pressure: No Reactivity: Yes			Yes

16. Other Information

Warning: This product contains cadmium, a chemical known to the state of California to cause cancer and birth defects or other reproductive harm.

Prepared By: IP

Revised: 3/11/05