

Issuing Date 10/24/2011

Revision Number 0

**1. PRODUCT AND COMPANY IDENTIFICATION**

**Product Name** MIXED ACID REAGENT  
**Product Code(s)** V-6278  
**Synonyms** none / ninguno / aucun  
**Recommended Use** Test kit reagent. Laboratory chemicals. Industrial (not for food or food contact use).  
**Company** LaMotte Company, Inc.  
 802 Washington Avenue  
 P.O. Box 329  
 Chestertown, MD 21620  
 USA  
**Emergency Telephone Number** 24 Hour Emergency Number (CHEM-TEL):  
 USA, Canada, Puerto Rico 1-800-255-3924  
 Outside North American Continent (Call collect) 813-248-0585

**2. HAZARDS IDENTIFICATION**

<b>Emergency Overview</b>		
May be harmful if swallowed		
May cause skin, eye, and respiratory tract irritation		
<b>Appearance</b> Clear, Blue green	<b>Physical State</b> Liquid	<b>Odor</b> Vinegar

**Potential Health Effects**  
**Principle Routes of Exposure** Eye contact, Skin contact, and, Ingestion.  
**Acute Toxicity**  
**Eyes** May cause irritation.  
**Skin** May cause irritation.  
**Inhalation** May cause irritation of respiratory tract.  
**Ingestion** May cause irritation. May be harmful if swallowed.  
**Chronic Effects**  
**Aggravated Medical Conditions** None known.  
**Environmental Hazard** No information available.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS-No	Weight %
Copper (II) sulfate pentahydrate (1:1:5)	7758-99-8	<0.1
Sodium phosphate dibasic	7558-79-4	<0.5
Acetic acid	64-19-7	1-5
Citric acid	77-92-9	1-5
Sodium chloride USP	7647-14-5	5-15
Ammonium chloride	12125-02-9	10-20
Water	7732-18-5	to 100%

#### 4. FIRST AID MEASURES

<b>General Advice</b>	Do not get in eyes, on skin, or on clothing. Show this safety data sheet to the doctor in attendance.
<b>Eye Contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
<b>Skin Contact</b>	Wash off with soap and plenty of water removing all contaminated clothes and shoes. If irritation develops or persists, consult physician.
<b>Inhalation</b>	Move to fresh air. If breathing is difficult, give oxygen.
<b>Ingestion</b>	Drink plenty of water. Clean mouth with water. Consult a physician.
<b>Notes to Physician</b>	Treat symptomatically.
<b>Protection of First-aiders</b>	Use personal protective equipment. See Section 8 for more detail. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

#### 5. FIRE-FIGHTING MEASURES

<b>Flammable Properties</b>	Not a fire hazard.			
<b>Flash Point</b>	Not applicable			
<b>Suitable Extinguishing Media</b>	Water spray, dry chemical, carbon dioxide (CO <sub>2</sub> ), or foam.			
<b>Explosion Data</b>				
<b>Protective Equipment and Precautions for Firefighters</b>	As in any fire, wear self-contained breathing apparatus and full protective gear.			
<b>NFPA</b>	<b>Health Hazard</b> 1	<b>Flammability</b> 0	<b>Stability</b> 0	<b>Physical and Chemical Hazards</b> N/A
<b>HMIS</b>	<b>Health Hazard</b> 1	<b>Flammability</b> 0	<b>Stability</b> 0	

#### 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions</b>	Avoid contact with the skin and the eyes. Refer to Section 8.
<b>Methods for Containment</b>	Sweep up in a manner that does not disperse dust and shovel into suitable containers for disposal. Dispose according to federal, state, and local regulations.
<b>Methods for Cleaning Up</b>	Containerize spill material and hold for later disposal. If local regulations permit, dissolve with large volume of water, neutralize with alkaline material (sodium bicarbonate), then rinse to drain with excess water. After cleaning, flush away traces with water.

#### 7. HANDLING AND STORAGE

<b>Handling</b>	Handle in accordance with good industrial hygiene and safety practice. Provide appropriate exhaust ventilation at places where dust is formed. Prevent contact with skin, eyes, and clothing. Do not ingest. Do not eat, drink, or smoke when using this product.
<b>Storage</b>	Keep containers tightly closed in a dry, cool, and well-ventilated place. Protect from moisture. Keep out of the reach of children.

#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Copper (II) sulfate pentahydrate (1:1:5) 7758-99-8	None Known	None Known	TWA: 1 mg/m <sup>3</sup>
Sodium phosphate dibasic 7558-79-4	None Known	None Known	None Known
Acetic acid 64-19-7	= 15 ppm STEL TWA: 10 ppm	TWA: 10 ppm TWA: 25 mg/m <sup>3</sup>	IDLH: 50 ppm TWA: 25 mg/m <sup>3</sup> TWA: 10 ppm STEL: 15 ppm STEL: 37 mg/m <sup>3</sup>
Citric acid 77-92-9	None Known	None Known	None Known
Sodium chloride USP 7647-14-5	None Known	None Known	None Known
Ammonium chloride 12125-02-9	= 20 mg/m <sup>3</sup> STEL TWA: 10 mg/m <sup>3</sup>	None Known	TWA: 10 mg/m <sup>3</sup> STEL: 20 mg/m <sup>3</sup>
Water 7732-18-5	None Known	None Known	None Known

**Engineering Measures**

Provide appropriate exhaust ventilation at places where dust is formed. Ensure that eyewash stations and safety showers are close to the workstation location.

**Personal Protective Equipment****Eye/Face Protection**

Safety glasses with side-shields. Avoid contact with eyes.

**Skin and Body Protection**

Gloves & Lab Coat.

**Respiratory Protection**

Maintain adequate ventilation.

**Hygiene Measures**

Avoid contact with skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice. Wash hands and face before breaks and immediately after handling the product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Clear Blue green	<b>Odor</b>	Vinegar
<b>Physical State</b>	Liquid	<b>pH</b>	2-3 (0.1g/10mL water)
<b>Flash Point</b>	Not applicable	<b>Autoignition Temperature</b>	Not applicable
<b>Boiling Point/Range</b>	> 100°C/212°F	<b>Flammability Limits in Air</b>	No data available
<b>Explosion Limits</b>	No data available	<b>Molecular Weight</b>	No data available
<b>Specific Gravity</b>	No data available	<b>Solubility</b>	Soluble
<b>Water Solubility</b>	Soluble in water	<b>Vapor Density</b>	No information available
<b>Vapor Pressure</b>	No information available		

## 10. STABILITY AND REACTIVITY

<b>Stability</b>	Stable.
<b>Incompatible Products</b>	Alkalis. Strong oxidizing agents. Strong bases.
<b>Conditions to Avoid</b>	Exposure to air or moisture over prolonged periods. Excessive heat.
<b>Hazardous Decomposition Products</b>	Ammonia. Hydrogen chloride. Sodium oxides.
<b>Hazardous Reactions</b>	Hazardous polymerization does not occur.

## 11. TOXICOLOGICAL INFORMATION

**Acute Toxicity****Product Information**

Product does not present an acute toxicity hazard based on known or supplied information.

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Copper (II) sulfate pentahydrate (1:1:5)	300 mg/kg ( Rat )	1000 mg/kg ( Rabbit )	None Known
Sodium phosphate dibasic	17 g/kg ( Rat )	None Known	None Known
Acetic acid	3310 mg/kg ( Rat )	1060 mg/kg ( Rabbit )	11.4 mg/L ( Rat ) 1 h
Citric acid	3000 mg/kg ( Rat )	None Known	None Known
Sodium chloride USP	None Known	10 g/kg ( Rabbit )	42 g/m <sup>3</sup> ( Rat ) 1 h
Ammonium chloride	1410 mg/kg ( Rat )	None Known	None Known
Water	90 mL/kg ( Rat )	None Known	None Known

**Chronic Toxicity****Carcinogenicity**

There are no known carcinogenic chemicals in this product.

Chemical Name	ACGIH	IARC	NTP	OSHA
Copper (II) sulfate pentahydrate (1:1:5)	None Known	None Known	None Known	None Known
Sodium phosphate dibasic	None Known	None Known	None Known	None Known
Acetic acid	None Known	None Known	None Known	None Known
Citric acid	None Known	None Known	None Known	None Known
Sodium chloride USP	None Known	None Known	None Known	None Known
Ammonium chloride	None Known	None Known	None Known	None Known
Water	None Known	None Known	None Known	None Known

**Endocrine Disruptor Information**

Chemical Name	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Copper (II) sulfate pentahydrate (1:1:5)	None Known	None Known	None Known
Sodium phosphate dibasic	None Known	None Known	None Known
Acetic acid	None Known	None Known	None Known
Citric acid	None Known	None Known	None Known
Sodium chloride USP	None Known	None Known	None Known
Ammonium chloride	None Known	None Known	None Known
Water	None Known	None Known	None Known

## 12. ECOLOGICAL INFORMATION

## Ecotoxicity

Chemical Name	Toxicity to Algae	Toxicity to Fish	Microtox	Daphnia Magna (Water Flea)
Copper (II) sulfate pentahydrate (1:1:5)	None Known	LC50= 0.1 mg/L Oncorhynchus mykiss 96 h	EC50 < 0.25 mg/L 30 min EC50 = 0.25 mg/L 15 min EC50 = 1.3 mg/L 5 min	EC50 = 0.24 mg/L 48 h
Sodium phosphate dibasic	None Known	None Known	None Known	None Known
Acetic acid	None Known	LC50= 75 mg/L Lepomis macrochirus 96 h LC50= 88 mg/L Pimephales promelas 96 h	EC50 = 8.8 mg/L 15 min EC50 = 8.8 mg/L 25 min EC50 = 8.8 mg/L 5 min	EC50 = 95 mg/L 24 h
Citric acid	None Known	LC50= 1516 mg/L Lepomis macrochirus 96 h LC50= 440 mg/L Leuciscus idus 96 h	EC50 = 14 mg/L 15 min	EC50 = 120 mg/L 72 h
Sodium chloride USP	None Known	LC50= 12946 mg/L Lepomis macrochirus 96 h LC50= 7650 mg/L Pimephales promelas 96 h LC50= 9675 mg/L Lepomis macrochirus 96 h	None Known	EC50 = 1000 mg/L 48 h
Ammonium chloride	None Known	LC50= 209 mg/L Cyprinus carpio 96 h	None Known	EC50 = 202 mg/L 24 h
Water	None Known	None Known	None Known	None Known

**Persistence and Degradability** No information available.

**Bioaccumulation/Accumulation** No information available.

Chemical Name	Log Pow
Copper (II) sulfate pentahydrate (1:1:5)	None Known
Sodium phosphate dibasic	None Known
Acetic acid	= -0.31 20 °C
Citric acid	-1.72 20 °C
Sodium chloride USP	None Known
Ammonium chloride	None Known
Water	None Known

### 13. DISPOSAL CONSIDERATIONS

**Waste Disposal Method** Dispose according to federal, state, and local regulations.

**Contaminated Packaging** Dispose of in accordance with local regulations.

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Copper (II) sulfate pentahydrate (1:1:5) - 7758-99-8	None Known	None Known	None Known	None Known
Sodium phosphate dibasic - 7558-79-4	None Known	None Known	None Known	None Known
Acetic acid - 64-19-7	None Known	None Known	None Known	None Known
Citric acid - 77-92-9	None Known	None Known	None Known	None Known
Sodium chloride USP - 7647-14-5	None Known	None Known	None Known	None Known
Ammonium chloride - 12125-02-9	None Known	None Known	None Known	None Known
Water - 7732-18-5	None Known	None Known	None Known	None Known

### 14. TRANSPORT INFORMATION

**DOT** Not regulated

**IATA** Not regulated

**IMDG/IMO** Not regulated

## 15. REGULATORY INFORMATION

**International Inventories**

Component	TSCA	DSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Copper (II) sulfate pentahydrate (1:1:5) 7758-99-8 ( <0.1 )	TSCA	DSL	EINECS/ELINCS	ENCS	X	KECL	X	X
Sodium phosphate dibasic 7558-79-4 ( <0.5 )	Present	X	X	1-497	X	KE-12344	X	X
Acetic acid 64-19-7 ( 1-5 )	Present	X	X	2-688	X	KE-00013	X	X
Citric acid 77-92-9 ( 1-5 )	Present	X	X	2-1318	X	KE-20831	X	X
Sodium chloride USP 7647-14-5 ( 5-15 )	Present	X	X	1-236	X	KE-31387	X	X
Ammonium chloride 12125-02-9 ( 10-20 )	Present	X	X	1-218	X	KE-01645	X	X
Water 7732-18-5 ( to 100% )	Present	X	X	ENCS	X	KE-35400	X	X

**U.S. Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values %
Copper (II) sulfate pentahydrate (1:1:5)	7758-99-8	<0.1	1.0
Sodium phosphate dibasic	7558-79-4	<0.5	None Known
Acetic acid	64-19-7	1-5	None Known
Citric acid	77-92-9	1-5	None Known
Sodium chloride USP	7647-14-5	5-15	None Known
Ammonium chloride	12125-02-9	10-20	1.0
Water	7732-18-5	to 100%	None Known

**SARA 311/312 Hazard Categories**

<b>Acute Health Hazard</b>	Yes
<b>Chronic Health Hazard</b>	No
<b>Fire Hazard</b>	No
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	No

**Clean Water Act**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Copper (II) sulfate pentahydrate (1:1:5) 7758-99-8 ( <0.1 )	None Known	X	None Known	None Known
Sodium phosphate dibasic 7558-79-4 ( <0.5 )	5000 lb	None Known	None Known	X
Acetic acid 64-19-7 ( 1-5 )	5000 lb	None Known	None Known	X
Citric acid 77-92-9 ( 1-5 )	None Known	None Known	None Known	None Known
Sodium chloride USP 7647-14-5 ( 5-15 )	None Known	None Known	None Known	None Known

**MIXED ACID REAGENT**

**Product Code(s) V-6278**

Ammonium chloride 12125-02-9 ( 10-20 )	5000 lb	None Known	None Known	X
Water 7732-18-5 ( to 100% )	None Known	None Known	None Known	None Known

**Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)**

This product contains the following substances which are listed hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act:

Chemical Name	CAS-No	Weight %	HAPS data	VOC Chemicals	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Copper (II) sulfate pentahydrate (1:1:5)	7758-99-8	<0.1	None Known	None Known	None Known	None Known
Sodium phosphate dibasic	7558-79-4	<0.5	None Known	None Known	None Known	None Known
Acetic acid	64-19-7	1-5	None Known	Group II	None Known	None Known
Citric acid	77-92-9	1-5	None Known	None Known	None Known	None Known
Sodium chloride USP	7647-14-5	5-15	None Known	None Known	None Known	None Known
Ammonium chloride	12125-02-9	10-20	None Known	None Known	None Known	None Known
Water	7732-18-5	to 100%	None Known	None Known	None Known	None Known

**CERCLA**

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Copper (II) sulfate pentahydrate (1:1:5)	10 lb	None Known
Sodium phosphate dibasic	5000 lb	None Known
Acetic acid	5000 lb	None Known
Citric acid	None Known	None Known
Sodium chloride USP	None Known	None Known
Ammonium chloride	5000 lb	None Known
Water	None Known	None Known

**U.S. State Regulations**

**California Proposition 65**

This product does not contain any Proposition 65 chemicals

Chemical Name	CAS-No	California Prop. 65
Copper (II) sulfate pentahydrate (1:1:5)	7758-99-8	None Known
Sodium phosphate dibasic	7558-79-4	None Known
Acetic acid	64-19-7	None Known
Citric acid	77-92-9	None Known
Sodium chloride USP	7647-14-5	None Known
Ammonium chloride	12125-02-9	None Known
Water	7732-18-5	None Known

**U.S. State Right-to-Know Regulations**

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Copper (II) sulfate pentahydrate (1:1:5)	X	X	X	None Known	None Known
Sodium phosphate dibasic	X	X	X	None Known	None Known
Acetic acid	X	X	X	None Known	X
Citric acid	None Known	None Known	None Known	None Known	None Known
Sodium chloride USP	None Known	None Known	None Known	None Known	None Known
Ammonium chloride	X	X	X	None Known	X



Water	None Known	None Known	None Known	None Known	None Known
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**International Regulations**

**Mexico - Grade**

Chemical Name	Carcinogen Status	Exposure Limits
Copper (II) sulfate pentahydrate (1:1:5)	None Known	None Known
Sodium phosphate dibasic	None Known	None Known
Acetic acid	None Known	Mexico: TWA= 25 mg/m <sup>3</sup> Mexico: TWA= 10 ppm
Citric acid	None Known	None Known
Sodium chloride USP	None Known	None Known
Ammonium chloride	None Known	Mexico: TWA= 10 mg/m <sup>3</sup>
Water	None Known	None Known

**Canada**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR. information downloaded from <http://ccinfoweb.ccohs.ca/whmis/search.html>

Component	WHMIS Hazard Class
Copper (II) sulfate pentahydrate (1:1:5) 7758-99-8 ( <0.1 )	1 % D2B
Sodium phosphate dibasic 7558-79-4 ( <0.5 )	Not determined
Acetic acid 64-19-7 ( 1-5 )	1 % B3 E D2B
Citric acid 77-92-9 ( 1-5 )	1 % E
Sodium chloride USP 7647-14-5 ( 5-15 )	Uncontrolled product according to WHMIS classification criteria
Ammonium chloride 12125-02-9 ( 10-20 )	1 % D2B
Water 7732-18-5 ( to 100% )	Uncontrolled product according to WHMIS classification criteria



**16. OTHER INFORMATION**

NFPA	HMIS	PPE	Transport Symbol						
	<table border="1"> <tr> <td>Health Hazard</td> <td style="text-align: center;"><b>1</b></td> </tr> <tr> <td>Fire Hazard</td> <td style="text-align: center;"><b>0</b></td> </tr> <tr> <td>Reactivity</td> <td style="text-align: center;"><b>0</b></td> </tr> </table>	Health Hazard	<b>1</b>	Fire Hazard	<b>0</b>	Reactivity	<b>0</b>		
Health Hazard	<b>1</b>								
Fire Hazard	<b>0</b>								
Reactivity	<b>0</b>								

**Prepared By** Regulatory Affairs Department

**Issuing Date** 10/24/2011

**Revision Date** 31-Oct-2011

**Revision Note**

Initial Release

**Disclaimer**

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

**End of MSDS**