

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product name Mixed Acid Reagent

Other means of identification

Product Code(s) V-6278

Recommended use of the chemical and restrictions on use

Recommended Use Use as a laboratory reagent. Laboratory chemicals. Industrial (not for food or food contact use).

Details of the supplier of the safety data sheet

Manufacturer Address

LaMotte Company, Inc.
802 Washington Avenue
P.O. Box 329
Chestertown, MD 21620 USA
T 410-778-3100
F 410-778-9748

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

Serious eye damage/eye irritation

Category 2A

EMERGENCY OVERVIEW

WARNING

Hazard statements

Causes serious eye irritation.



Appearance Clear Blue green

Physical state liquid

Odor vinegar

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling. Wear eye/face protection.

Precautionary Statements - Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse.***

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF SWALLOWED: Drink 1 or 2 glasses of water. Call a physician immediately.

Precautionary Statements - Storage

Store in a well-ventilated place. Keep cool.

Precautionary Statements - Disposal

Dispose of contents/containers in accordance with local regulations.***

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	Weight-%
Acetic acid***	64-19-7	2
Citric acid***	77-92-9	4
Sodium chloride USP***	7647-14-5	10
Ammonium chloride***	12125-02-9	17

4. FIRST AID MEASURES

First Aid Measures

General advice	Do not get in eyes, on skin, or on clothing. Show this safety data sheet to the doctor in attendance.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.
Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. Take off contaminated clothing and wash before reuse. If symptoms persist, call a physician.
Inhalation	Remove to fresh air. If symptoms persist, call a physician.
Ingestion	Drink plenty of water. Consult a physician if necessary.
Self-protection of the first aider	Use personal protection recommended in Section 8. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.
Notes to Physician	Treat symptomatically.

5. FIREFIGHTING MEASURES

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protection recommended in Section 8. Avoid contact with skin, eyes or clothing.

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Dispose of contents/containers in accordance with local regulations. Absorb/Cover spill with sodium bicarbonate or sodium carbonate to neutralize, then place in a chemical waste container for later disposal.

Methods for cleaning up After cleaning, flush away traces with water. If local regulations permit, rinse to drain with excess water.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Do not taste or swallow. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product.

Conditions for safe storage, including any incompatibilities

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Keep out of the reach of children.

Incompatible Products Alkalis. Strong oxidizing agents. Strong bases.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Acetic acid*** 64-19-7	STEL: 15 ppm TWA: 10 ppm***	TWA: 10 ppm TWA: 25 mg/m ³ (vacated) TWA: 10 ppm (vacated) TWA: 25 mg/m ³ ***	IDLH: 50 ppm TWA: 10 ppm TWA: 25 mg/m ³ STEL: 15 ppm STEL: 37 mg/m ³ ***
Citric acid*** 77-92-9	-	-	Not Established
Sodium chloride USP*** 7647-14-5	-	-	Not Established
Ammonium chloride*** 12125-02-9	STEL: 20 mg/m ³ fume TWA: 10 mg/m ³ fume***	(vacated) TWA: 10 mg/m ³ fume (vacated) STEL: 20 mg/m ³ fume***	TWA: 10 mg/m ³ fume STEL: 20 mg/m ³ fume***

Appropriate engineering controls

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.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Wear safety glasses with side shields (or goggles). Avoid contact with eyes.

Skin and body protection Gloves & Lab Coat. Impervious clothing. Protective gloves. Rubber gloves. Nitrile rubber.

Respiratory protection Maintain adequate ventilation.

Hygiene Measures Avoid contact with eyes, skin 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

Information on basic physical and chemical properties

Physical state liquid
Appearance Clear Blue green
Odor vinegar

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	2-3	
Melting point / freezing point	No information available	
Boiling point / boiling range	> 100 °C / 212 °F	
Flash point	Not Applicable	
Evaporation rate		
Flammability (solid, gas)	No information available	
Flammability Limit in Air		
Upper flammability limit:	No information available	
Lower flammability limit:	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	No data available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Partition coefficient	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Explosive properties	No information available	
Oxidizing properties	No information available	

Other Information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Density	No information available
Bulk density	No information available

10. STABILITY AND REACTIVITY

Stability	Stable.
Hazardous Reactions	Hazardous polymerization does not occur.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Exposure to air or moisture over prolonged periods. Excessive heat.
Incompatible materials	Alkalis. Strong oxidizing agents. Strong bases.
Hazardous decomposition products	Ammonia. Hydrogen chloride. Sodium oxides.

11. TOXICOLOGICAL INFORMATION

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

Information on likely routes of exposure

Inhalation	None known.
Eye contact	May cause temporary eye irritation.
Skin contact	Substance may cause slight skin irritation.
Ingestion	May be harmful if swallowed. May cause gastrointestinal discomfort if consumed in large amounts.

Component identification

Chemical name	ATEmix (oral)	ATEmix (dermal)	Inhalation LC50
Acetic acid*** 64-19-7	= 3310 mg/kg (Rat)***	= 1060 mg/kg (Rabbit)***	= 11.4 mg/L (Rat) 4 h***
Citric acid*** 77-92-9	= 3 g/kg (Rat) = 3000 mg/kg (Rat)***	Not Established	Not Established
Sodium chloride USP***	= 3 g/kg (Rat)***	> 10 g/kg (Rabbit)***	> 42 g/m ³ (Rat) 1 h***

7647-14-5			
Ammonium chloride*** 12125-02-9	= 1650 mg/kg (Rat)***	Not Established	Not Established

Information on toxicological effects**Carcinogenicity** There are no known carcinogenic chemicals in this product.

Chemical name	ACGIH	IARC	NTP	OSHA
Acetic acid*** 64-19-7	Not Established	Not Established	Not Established	Not Established
Citric acid*** 77-92-9	Not Established	Not Established	Not Established	Not Established
Sodium chloride USP*** 7647-14-5	Not Established	Not Established	Not Established	Not Established
Ammonium chloride*** 12125-02-9	Not Established	Not Established	Not Established	Not Established

ATEmix (oral) 6,421.00 mg/kg
ATEmix (dermal) 34,641.00 mg/kg

12. ECOLOGICAL INFORMATION**Ecotoxicity****Unknown Aquatic Toxicity** 0.27 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical name	Toxicity to Algae	Toxicity to Fish	Daphnia Magna (Water Flea)
Acetic acid*** 64-19-7	Not Established	75: 96 h Lepomis macrochirus mg/L LC50 static 79: 96 h Pimephales promelas mg/L LC50 static***	47: 24 h Daphnia magna mg/L EC50 65: 48 h Daphnia magna mg/L EC50 Static***
Citric acid*** 77-92-9	Not Established	1516: 96 h Lepomis macrochirus mg/L LC50 static***	120: 72 h Daphnia magna mg/L EC50***
Sodium chloride USP*** 7647-14-5	Not Established	4747 - 7824: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 5560 - 6080: 96 h Lepomis macrochirus mg/L LC50 flow-through 6020 - 7070: 96 h Pimephales promelas mg/L LC50 static 6420 - 6700: 96 h Pimephales promelas mg/L LC50 static 12946: 96 h Lepomis macrochirus mg/L LC50 static 7050: 96 h Pimephales promelas mg/L LC50 semi-static***	340.7 - 469.2: 48 h Daphnia magna mg/L EC50 Static 1000: 48 h Daphnia magna mg/L EC50***
Ammonium chloride*** 12125-02-9	Not Established	209: 96 h Cyprinus carpio mg/L LC50 static 725: 24 h Lepomis macrochirus mg/L LC50***	202: 24 h Daphnia magna mg/L LC50***

Persistence and degradability

No information available.

Bioaccumulation/Accumulation

No information available.

Chemical name	Log Pow
Acetic acid*** 64-19-7	-0.31***
Citric acid*** 77-92-9	-1.72***
Sodium chloride USP*** 7647-14-5	Not Established
Ammonium chloride*** 12125-02-9	Not Established

13. DISPOSAL CONSIDERATIONS

Disposal Methods Dispose of contents/containers in accordance with local regulations.

Contaminated packaging Dispose of waste product or used containers according to local regulations.

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Acetic acid*** 64-19-7	Not Established	-	Not Established	Not Established
Citric acid*** 77-92-9	Not Established	-	Not Established	Not Established
Sodium chloride USP*** 7647-14-5	Not Established	-	Not Established	Not Established
Ammonium chloride*** 12125-02-9	Not Established	-	Not Established	Not Established

Chemical name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Acetic acid*** 64-19-7	Not Established	Not Established	Not Established	Not Established
Citric acid*** 77-92-9	Not Established	Not Established	Not Established	Not Established
Sodium chloride USP*** 7647-14-5	Not Established	Not Established	Not Established	Not Established
Ammonium chloride*** 12125-02-9	Not Established	Not Established	Not Established	Not Established

Chemical name	California Hazardous Waste Status
Acetic acid*** 64-19-7	Toxic Corrosive Ignitable***
Citric acid*** 77-92-9	-
Sodium chloride USP*** 7647-14-5	-
Ammonium chloride*** 12125-02-9	-

14. TRANSPORT INFORMATION

DOT Not regulated

ICAO Not regulated

IATA Not regulated

IMDG/IMO Not regulated

RID Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Does not comply
EINECS/ELINCS	Does not comply
ENCS	Does not comply
IECSC	Complies
KECL	Does not comply
PICCS	Complies

AICS Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

US 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	SARA 313 - Threshold Values %
Acetic acid*** 64-19-7	Not Established
Citric acid*** 77-92-9	Not Established
Sodium chloride USP*** 7647-14-5	Not Established
Ammonium chloride*** 12125-02-9	1.0***

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (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)

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Acetic acid*** 64-19-7	5000 lb***	Not Established	Not Established	X***
Citric acid*** 77-92-9	Not Established	Not Established	Not Established	Not Established
Sodium chloride USP*** 7647-14-5	Not Established	Not Established	Not Established	Not Established
Ammonium chloride*** 12125-02-9	5000 lb***	Not Established	Not Established	X***

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	RQ
Acetic acid*** 64-19-7	5000 lb***	Not Established	RQ 5000 lb final RQ RQ 2270 kg final RQ***
Citric acid*** 77-92-9	-	Not Established	-
Sodium chloride USP*** 7647-14-5	-	Not Established	-
Ammonium chloride*** 12125-02-9	5000 lb***	Not Established	RQ 5000 lb final RQ RQ 2270 kg final RQ***

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals

Chemical name	California Proposition 65
Acetic acid*** 64-19-7	Not Established
Citric acid*** 77-92-9	Not Established
Sodium chloride USP*** 7647-14-5	Not Established
Ammonium chloride*** 12125-02-9	Not Established

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Acetic acid*** 64-19-7	X***	X***	X***
Citric acid*** 77-92-9	Not Established	Not Established	Not Established
Sodium chloride USP*** 7647-14-5	Not Established	Not Established	Not Established
Ammonium chloride*** 12125-02-9	X***	X***	X***

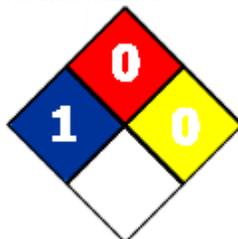
CPSC (Consumer Product Safety Commission) - Specially Regulated Substances

Chemical name	CPSC (Consumer Product Safety Commission) - Specially Regulated Substances
Acetic acid*** 64-19-7	Add POISON to label, 16 CFR 1500.129***

16. OTHER INFORMATION

NFPA Health hazard 1 Flammability 0 Instability 0 Physical and Chemical Hazards N/A

Health hazard 1



Health Hazard	1
Fire Hazard	0
Reactivity	0

Prepared by
Issuing Date
Disclaimer

Regulatory Affairs Department
May-27-2015

The information provided on this SDS 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 Safety Data Sheet

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product name Nitrate Reducing Reagent

Other means of identification

Product Code(s) V-6279
UN-No 2570

Recommended use of the chemical and restrictions on use

Recommended Use Use as a laboratory reagent. Laboratory chemicals. Industrial (not for food or food contact use).

Details of the supplier of the safety data sheet

Manufacturer Address
 LaMotte Company, Inc.
 802 Washington Avenue
 P.O. Box 329
 Chestertown, MD 21620 USA
 T 410-778-3100
 F 410-778-9748

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

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Serious eye damage/eye irritation	Category 2
Germ cell mutagenicity	Category 2
Carcinogenicity	Category 1A
Reproductive Toxicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1

EMERGENCY OVERVIEW

DANGER

Hazard statements

Harmful if swallowed. Harmful if inhaled. Causes serious eye irritation. Suspected of causing genetic defects. May cause cancer. Suspected of damaging fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure.



Appearance Gray

Physical state powder

Odor Slight

Precautionary Statements - Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear eye/face protection. Do not breathe dust/fume/gas/mist/vapors/spray.

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

IF ON SKIN: Wash with plenty of soap and water.

Take off contaminated clothing and wash before reuse

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell, Rinse mouth

Precautionary Statements - Storage

Store locked up.

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant.

Other Hazards

Very toxic to aquatic life with long lasting effects

Unknown Acute Toxicity

34.69% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	Weight-%
N-(1-Naphthyl)ethylenediamine dihydrochloride	1465-25-4	<1
Cadmium and compounds (as Cd)	7440-43-9	3
Manganese sulfate monohydrate	10034-96-5	10
Ammonium chloride	12125-02-9	45-55

4. FIRST AID MEASURES

First Aid Measures

General advice	Show this safety data sheet to the doctor in attendance. Do not get in eyes, on skin, or on clothing.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.
Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. Take off contaminated clothing and wash before reuse. If symptoms persist, call a physician.
Inhalation	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. If symptoms persist, call a physician.
Ingestion	Do not induce vomiting without medical advice. Rinse mouth. Drink plenty of water. Never give anything by mouth to an unconscious person. Immediate medical attention is required.
Self-protection of the first aider	Use personal protection recommended in Section 8. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Dry chemical or CO₂.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of toxic and corrosive gases/vapors.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protection recommended in Section 8. Wear respiratory protection. If you have not donned special protective clothing approved for this material, do not expose yourself to any risk of this material touching you. Evacuate personnel to safe areas.

Other Information Ventilate the area.

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Do not flush to sewer. Prevent dust cloud. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13).

Methods for cleaning up Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not taste or swallow. Do not breathe vapors/dust.

Conditions for safe storage, including any incompatibilities

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Do not allow contact with air. Store away from incompatible materials. Keep out of the reach of children.

Incompatible Products Strong acids. Strong oxidizing agents. Strong bases. Finely powdered metals.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
N-(1-Naphthyl)ethylenediamine dihydrochloride 1465-25-4	-	-	Not Established
Cadmium and compounds (as Cd) 7440-43-9	TWA: 0.01 mg/m ³ TWA: 0.002 mg/m ³	TWA: 0.1 mg/m ³ TWA: 0.2 mg/m ³ TWA: 5 µg/m ³ Ceiling: 0.3 mg/m ³ Ceiling: 0.6 mg/m ³	IDLH: 9 mg/m ³
Manganese sulfate monohydrate 10034-96-5	TWA: 0.02 mg/m ³ TWA: 0.1 mg/m ³	Ceiling: 5 mg/m ³	IDLH: 500 mg/m ³ TWA: 1 mg/m ³ STEL: 3 mg/m ³
Ammonium chloride	20 mg/m ³ STEL (fume)	-	TWA: 10 mg/m ³

12125-02-9	TWA: 10 mg/m ³	STEL: 20 mg/m ³
------------	---------------------------	----------------------------

NIOSH IDLH: *Immediately Dangerous to Life or Health*

Appropriate engineering controls

Engineering Measures Showers
 Eyewash stations
 Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Wear safety glasses with side shields (or goggles). If splashes are likely to occur. Face protection shield.

Skin and body protection Gloves & Lab Coat. Wear protective gloves/clothing. Protective gloves. Nitrile rubber.

Respiratory protection Handle in an enclosing hood with exhaust ventilation. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hygiene Measures Use only with adequate ventilation. Wear suitable gloves and eye/face protection. Avoid contact with eyes, skin and clothing. Wash hands and face before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	powder	Odor	Slight
Appearance	Gray		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
	pH	
	7	(0.1g/10mL water)
Melting point / freezing point	No information available	
Boiling point / boiling range	No information available	
Flash point	No information available	
Evaporation rate		
Flammability (solid, gas)	No information available	
Flammability Limit in Air		
Upper flammability limit:	No information available	
Lower flammability limit:	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	No information available	
Water solubility	Partly soluble	
Solubility in other solvents	No information available	
Partition coefficient	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Explosive properties	No information available	
Oxidizing properties	No information available	
<u>Other Information</u>		
Softening point	No information available	
Molecular weight	No information available	
VOC Content (%)	No information available	
Density	No information available	
Bulk density	No information available	

10. STABILITY AND REACTIVITY

Stability	Stable under recommended storage conditions.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Exposure to air or moisture over prolonged periods. Excessive heat. Incompatible Products.
Incompatible materials	Strong acids. Strong oxidizing agents. Strong bases. Finely powdered metals.
Hazardous decomposition products	May emit toxic fumes under fire conditions. Cadmium oxides. Ammonia. Carbon oxides (COx). Nitrogen oxides (NOx). Sodium oxides. Hydrogen chloride gas.

11. TOXICOLOGICAL INFORMATION

Product Information Harmful if swallowed, inhaled, or absorbed through skin

Information on likely routes of exposure

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
N-(1-Naphthyl)ethylenediamine dihydrochloride 1465-25-4	Not Established	Not Established	Not Established
Cadmium and compounds (as Cd) 7440-43-9	= 1140 mg/kg (Rat)	Not Established	= 25 mg/m ³ (Rat) 30 min
Manganese sulfate monohydrate 10034-96-5	= 782 mg/kg (Rat)	Not Established	Not Established
Ammonium chloride 12125-02-9	= 1650 mg/kg (Rat)	Not Established	Not Established

Information on toxicological effects

Chemical name	ACGIH	IARC	NTP	OSHA
N-(1-Naphthyl)ethylenediamine dihydrochloride 1465-25-4	Not Established	Not Established	Not Established	Not Established
Cadmium and compounds (as Cd) 7440-43-9	A2	Group 1	Known	X
Manganese sulfate monohydrate 10034-96-5	Not Established	Not Established	Not Established	Not Established
Ammonium chloride 12125-02-9	Not Established	Not Established	Not Established	Not Established

ACGIH (American Conference of Governmental Industrial Hygienists)

A2 - Suspected Human Carcinogen

IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

NTP (National Toxicology Program)

Known - Known Carcinogen

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

ATEmix (oral)	1403
ATEmix (dermal)	26806 mg/kg
ATEmix (inhalation-dust/mist)	1.2 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

Unknown Aquatic Toxicity 2.54 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical name	Toxicity to Algae	Toxicity to Fish	Daphnia Magna (Water Flea)
N-(1-Naphthyl)ethylenediamine dihydrochloride 1465-25-4	Not Established	Not Established	Not Established
Cadmium and compounds (as Cd)	Not Established	0.0004 - 0.003: 96 h Pimephales	0.0244: 48 h Daphnia magna

7440-43-9		promelas mg/L LC50 0.002: 96 h Cyprinus carpio mg/L LC50 0.003: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.006: 96 h Oncorhynchus mykiss mg/L LC50 static 0.016: 96 h Oryzias latipes mg/L LC50 0.24: 96 h Cyprinus carpio mg/L LC50 static 21.1: 96 h Lepomis macrochirus mg/L LC50 flow-through 4.26: 96 h Cyprinus carpio mg/L LC50 semi-static	mg/L EC50 Static
Manganese sulfate monohydrate 10034-96-5	Not Established	Not Established	Not Established
Ammonium chloride 12125-02-9	Not Established	209: 96 h Cyprinus carpio mg/L LC50 static 725: 24 h Lepomis macrochirus mg/L LC50	202: 24 h Daphnia magna mg/L LC50

Persistence and degradability

No information available.

Bioaccumulation/Accumulation

No information available.

Chemical name	Log Pow
N-(1-Naphthyl)ethylenediamine dihydrochloride 1465-25-4	Not Established
Cadmium and compounds (as Cd) 7440-43-9	Not Established
Manganese sulfate monohydrate 10034-96-5	Not Established
Ammonium chloride 12125-02-9	Not Established

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose of waste product or used containers according to local regulations. Should not be released into the environment.

Contaminated packaging

Dispose of waste product or used containers according to local regulations.

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
N-(1-Naphthyl)ethylenediamine dihydrochloride 1465-25-4	Not Established	-	Not Established	Not Established
Cadmium and compounds (as Cd) 7440-43-9	(hazardous constituent - no waste number)	Included in waste streams: F006, F039, K061, K064, K065, K066, K069, K100	1.0 mg/L regulatory level	Not Established
Manganese sulfate monohydrate 10034-96-5	Not Established	-	Not Established	Not Established
Ammonium chloride 12125-02-9	Not Established	-	Not Established	Not Established

Chemical name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
N-(1-Naphthyl)ethylenediamine dihydrochloride 1465-25-4	Not Established	Not Established	Not Established	Not Established
Cadmium and compounds (as Cd) 7440-43-9	Not Established	Not Established	Not Established	Not Established
Manganese sulfate monohydrate 10034-96-5	Not Established	Not Established	Not Established	Not Established
Ammonium chloride	Not Established	Not Established	Not Established	Not Established

12125-02-9			
Chemical name		California Hazardous Waste Status	
N-(1-Naphthyl)ethylenediamine dihydrochloride 1465-25-4		-	
Cadmium and compounds (as Cd) 7440-43-9		-	
Manganese sulfate monohydrate 10034-96-5		-	
Ammonium chloride 12125-02-9		-	

14. TRANSPORT INFORMATION

DOT

Proper shipping name CADMIUM COMPOUNDS
UN-No 2570
Hazard Class 6.1
Packing group III

IATA

Proper shipping name CADMIUM COMPOUNDS
UN-No 2570
Hazard Class 6.1
Packing group III

IMDG/IMO

Proper shipping name CADMIUM COMPOUNDS
UN-No 2570
Hazard Class 6.1
Packing group III

15. REGULATORY INFORMATION

International Inventories

TSCA Complies
DSL/NDSL Does not comply
EINECS/ELINCS Does not comply
ENCS Does not comply
IECSC Complies
KECL Does not comply
PICCS Complies
AICS Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US 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	SARA 313 - Threshold Values %
N-(1-Naphthyl)ethylenediamine dihydrochloride 1465-25-4	Not Established
Cadmium and compounds (as Cd) 7440-43-9	0.1
Manganese sulfate monohydrate 10034-96-5	1.0
Ammonium chloride 12125-02-9	1.0

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (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)

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
N-(1-Naphthyl)ethylenediamine dihydrochloride 1465-25-4	Not Established	Not Established	Not Established	Not Established
Cadmium and compounds (as Cd) 7440-43-9	Not Established	X	X	Not Established
Manganese sulfate monohydrate 10034-96-5	Not Established	Not Established	Not Established	Not Established
Ammonium chloride 12125-02-9	5000 lb	Not Established	Not Established	X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	RQ
N-(1-Naphthyl)ethylenediamine dihydrochloride 1465-25-4	-	Not Established	-
Cadmium and compounds (as Cd) 7440-43-9	10 lb	Not Established	RQ 10 lb final RQ RQ 4.54 kg final RQ
Manganese sulfate monohydrate 10034-96-5	-	Not Established	-
Ammonium chloride 12125-02-9	5000 lb	Not Established	RQ 5000 lb final RQ RQ 2270 kg final RQ

US State Regulations**California Proposition 65**

WARNING! This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm

Chemical name	California Proposition 65
N-(1-Naphthyl)ethylenediamine dihydrochloride 1465-25-4	Not Established
Cadmium and compounds (as Cd) 7440-43-9	Carcinogen Developmental Male Reproductive
Manganese sulfate monohydrate 10034-96-5	Not Established
Ammonium chloride	Not Established

12125-02-9

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
N-(1-Naphthyl)ethylenediamine dihydrochloride 1465-25-4	Not Established	Not Established	Not Established
Cadmium and compounds (as Cd) 7440-43-9	X	X	X
Manganese sulfate monohydrate 10034-96-5	X	Not Established	X
Ammonium chloride 12125-02-9	X	X	X

CPSC (Consumer Product Safety Commission) - Specially Regulated Substances

Chemical name	CPSC (Consumer Product Safety Commission) - Specially Regulated Substances
Cadmium and compounds (as Cd) 7440-43-9	Regulated, CPSIA Section 106 (must comply with ASTM F963-07)

16. OTHER INFORMATION**NFPA**

Health hazard 3

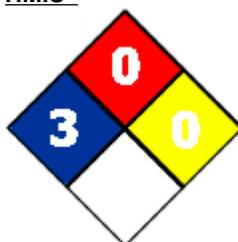
Flammability 0

Instability 0

Physical and Chemical Hazards N/A

HMIS

Health hazard 3



Health Hazard	3
Fire Hazard	0
Reactivity	0

Prepared by

Regulatory Affairs Department

Issuing Date

Apr-30-2015

Revision Date

Jun-10-2015

Reason for revision

New US GHS format

Disclaimer

The information provided on this SDS 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 Material Safety Data Sheet