Safety Data Sheet

OSHA format

Issuing Date Apr-07-2015 **Revision Number** 1

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

Product identifier

Product name **Alkaline Potassium Iodide with Azide**

Other means of identification

Product Code(s) **7166**

UN-No 2922

Recommended use of the chemical and restrictions on use

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

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 - Dermal	Category 4
Skin corrosion/irritation	Category 1 Sub-category A
Serious eye damage/eye irritation	Category 1

EMERGENCY OVERVIEW

DANGER

Hazard statements

Harmful if swallowed. Harmful in contact with skin. Causes severe skin burns and eye damage.

Appearance Clear, colorless **Physical state** liquid **Odor** Odorless

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Do not taste or swallow. Do not breathe dust/fume/gas/mist/vapors/spray.

Precautionary Statements - Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center or doctor/physician if you feel unwell. Wash contaminated clothing before reuse. IF ON SKIN (or hair):

Remove immediately all contaminated clothing. Rinse skin with water.
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. IF SWALLOWED. Do NOT induce vomiting.

Precautionary Statements - Storage
Store locked up.

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant.

Other Hazards
Harmful to aquatic life with long lasting effects

Unknown Acute Toxicity
15% of the mixture consists of ingredient(s) of unknown toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Chemical name	CAS No	Weight-%
Sodium azide	26628-22-8	1.05
Potassium iodide	7681-11-0	15
Potassium hydroxide	1310-58-3	70

4. FIRST AID MEASURES

First Aid Measures

General advice Do not get in eyes, on skin, or on clothing. Do not breathe dust/fume/gas/mist/vapors/spray. Do not delay care and transport of a seriously injured person.

Eye contact IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. 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. Immediate medical attention is required.

Inhalation IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician immediately.

Ingestion Do NOT induce vomiting. Drink plenty of water. Immediate medical attention is required. Never give anything by mouth to an unconscious person. Rinse mouth.

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. Avoid contact with eyes, skin and clothing.

5. FIREFIGHTING MEASURES

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

Specific hazards arising from the chemical
React vigorously and/or explosively with water.

Hazardous combustion products

Contact with metals may evolve flammable hydrogen gas.

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. Avoid breathing vapors or mists. Ensure adequate ventilation, especially in confined areas.

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. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Dispose of contents/containers in accordance with local regulations.

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 eyes, skin and clothing. Do not taste or swallow. 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. Keep away from heat. Store away from incompatible materials. Protect from moisture. Keep away from metals and organic halogens. Do not flush into surface water or sanitary sewer system. Keep out of the reach of children.

Incompatible Products Strong acids. Metals. Water reactive material.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sodium azide 26628-22-8	Ceiling: 0.29 mg/m³ NaN3 Ceiling: 0.11 ppm Hydrazoic acid vapor	(vacated) S* (vacated) Ceiling: 0.1 ppm HN3 (vacated) Ceiling: 0.3 mg/m³ NaN3	Ceiling: 0.1 ppm HN3 Ceiling: 0.3 mg/m³ NaN3
Potassium iodide 7681-11-0	TWA: 0.01 ppm inhalable fraction and vapor	-	Not Established
Potassium hydroxide 1310-58-3	Ceiling: 2 mg/m³	(vacated) Ceiling: 2 mg/m³	Ceiling: 2 mg/m³

Appropriate engineering controls

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

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

Skin and body protection Wear protective gloves/protective clothing/eye protection/face protection. Nitrile rubber.

Respiratory protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Take off contaminated clothing and wash before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state liquid
Appearance Clear, colorless **Odor** Odorless

Property	Values	Remarks • Method
pH	14	
Melting point / freezing point	No information available	
Boiling point / boiling range	No information available	
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	~1.5 (water = 1)	
Water solubility	No information available	
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 under recommended storage conditions.
Hazardous Reactions Reacts violently with water. Contact with metals may evolve flammable hydrogen gas.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid Excessive heat. Incompatible Products.
Incompatible materials Strong acids. Metals. Water reactive material.
Hazardous decomposition products Carbon oxides (COx). Potassium Oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Component identification

Chemical name	ATEmix (oral)	ATEmix (dermal)	Inhalation LC50
Sodium azide 26628-22-8	= 27 mg/kg (Rat)	= 20 mg/kg (Rabbit) = 50 mg/kg (Rat)	Not Established
Potassium iodide 7681-11-0	Not Established	Not Established	Not Established
Potassium hydroxide 1310-58-3	= 284 mg/kg (Rat)	Not Established	Not Established

Information on toxicological effects

Chemical name	ACGIH	IARC	NTP	OSHA
Sodium azide 26628-22-8	Not Established	Not Established	Not Established	Not Established
Potassium iodide 7681-11-0	Not Established	Not Established	Not Established	Not Established
Potassium hydroxide 1310-58-3	Not Established	Not Established	Not Established	Not Established

Chronic toxicity Prolonged exposure may cause chronic effects.

ATEmix (oral) 475.00 mg/kg
ATEmix (dermal) 1,619.00 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

Unknown Aquatic Toxicity 15 % of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical name	Toxicity to Algae	Toxicity to Fish	Daphnia Magna (Water Flea)
Sodium azide 26628-22-8	Not Established	0.7: 96 h Lepomis macrochirus mg/L LC50 0.8: 96 h Oncorhynchus mykiss mg/L LC50 5.46: 96 h Pimephales promelas mg/L LC50 flow-through	Not Established
Potassium iodide 7681-11-0	Not Established	Not Established	Not Established
Potassium hydroxide 1310-58-3	Not Established	80: 96 h Gambusia affinis mg/L LC50 static	Not Established

Persistence and degradability

Based on components product is expected to be poorly eliminated from water and poorly biodegradable.

Bioaccumulation/Accumulation

Some components of this material have some potential to bioaccumulate but not all have been tested. Sodium azide: When released into the soil, this material is not expected to biodegrade. When released into the soil, this material is expected to leach into groundwater. When released into the air, this material may be moderately degraded by photolysis.

Chemical name	Log Pow
Sodium azide 26628-22-8	Not Established
Potassium iodide 7681-11-0	Not Established
Potassium hydroxide 1310-58-3	0.65 0.83

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 Do not reuse empty containers.

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes

Sodium azide 26628-22-8	Not Established	-	Not Established	Not Established
Potassium iodide 7681-11-0	Not Established	-	Not Established	Not Established
Potassium hydroxide 1310-58-3	Not Established	-	Not Established	Not Established

Chemical name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Sodium azide 26628-22-8	Not Established	P105	Not Established	Not Established
Potassium iodide 7681-11-0	Not Established	Not Established	Not Established	Not Established
Potassium hydroxide 1310-58-3	Not Established	Not Established	Not Established	Not Established

Chemical name	California Hazardous Waste Status
Sodium azide 26628-22-8	Ignitable Reactive
Potassium iodide 7681-11-0	-
Potassium hydroxide 1310-58-3	Toxic Corrosive

14. TRANSPORT INFORMATION

DOT

Proper shipping name CORROSIVE LIQUIDS, TOXIC, NOS (Potassium hydroxide/Sodium azide solution)
UN-No 2922
Hazard Class 8
Subsidiary class 6.1
Packing group II
Reportable Quantity (RQ) 1000

IATA

Proper shipping name CORROSIVE LIQUIDS, TOXIC, NOS (Potassium hydroxide/Sodium azide solution)
UN-No 2922
Hazard Class 8
Subsidiary class 6.1
Packing group II

IMDG/IMO

Proper shipping name CORROSIVE LIQUIDS, TOXIC, NOS (Potassium hydroxide/Sodium azide solution)
UN-No 2922
Hazard Class 8
Subsidiary class 6.1
Packing group II

15. REGULATORY INFORMATION

International Inventories

TSCA Complies
DSL/NDSL Complies
EINECS/ELINCS Complies
ENCS Complies
IECSC Complies
KECL Complies
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 %
Sodium azide 26628-22-8	1.0
Potassium iodide 7681-11-0	Not Established
Potassium hydroxide 1310-58-3	Not Established

SARA 311/312 Hazard Categories

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

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
Sodium azide 26628-22-8	Not Established	Not Established	Not Established	Not Established
Potassium iodide 7681-11-0	Not Established	Not Established	Not Established	Not Established
Potassium hydroxide 1310-58-3	1000 lb	Not Established	Not Established	X

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	RQ
Sodium azide 26628-22-8	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ
Potassium iodide 7681-11-0	-	Not Established	-
Potassium hydroxide 1310-58-3	1000 lb	Not Established	RQ 1000 lb final RQ RQ 454 kg final RQ

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

Chemical name	California Proposition 65
Sodium azide	Not Established

26628-22-8	
Potassium iodide 7681-11-0	Not Established
Potassium hydroxide 1310-58-3	Not Established

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Sodium azide 26628-22-8	X	X	X
Potassium iodide 7681-11-0	Not Established	Not Established	Not Established
Potassium hydroxide 1310-58-3	X	X	X

CPSC (Consumer Product Safety Commission) - Specially Regulated Substances

Chemical name	CPSC (Consumer Product Safety Commission) - Specially Regulated Substances
Potassium hydroxide 1310-58-3	Banned, 16 CFR 1500.17 Add POISON to label, 16 CFR 1500.129

16. OTHER INFORMATION

NFPA **Health hazard** 3 **Flammability** 0 **Instability** 0 **Physical and Chemical Hazards** W

HMIS **Health hazard** 3 **Flammability** 0 **Stability** 2

Prepared by Regulatory Affairs Department
Issuing Date Apr-07-2015

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 Safety Data Sheet

Safety Data Sheet

OSHA format

Issuing Date Nov-15-2010 **Revision Date** Jan-12-2015 **Revision Number** 0

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

Product identifier

Product name **Biguanide Shock Tablets**

Other means of identification

Product Code(s) **6653A**

Recommended use of the chemical and restrictions on use

Recommended Use Test kit reagent for water testing. Laboratory chemicals. Research and Development. Professional users.

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

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

EMERGENCY OVERVIEW

Appearance White to off-white **Physical state** solid Tablet **Odor** Odorless

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.

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 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 locked up.

Precautionary Statements - Disposal

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

Other Hazards

May be harmful in contact with skin

3. COMPOSITION/INFORMATION ON INGREDIENTS*

This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Chemical name	CAS No	Weight-%
DPD Sulfate	6283-63-2	1
Boric acid	10043-35-3	9

LaMotte Company proprietary formulation under the State of New Jersey Trade Secret Protection Law, assigned the NJTSRN 80100291-5003p, and may be disclosed only in a medical emergency

4. FIRST AID MEASURES

First Aid Measures

General advice Do not get in eyes, on skin, or on clothing.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash off immediately with soap and plenty of water for at least 15 minutes while removing all contaminated clothing and shoes. Consult a physician.

Inhalation Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and contact emergency personnel. Call a physician immediately.

Ingestion Induce vomiting, but only if victim is fully conscious. Drink plenty of water. Clean mouth with water. Never give anything by mouth to an unconscious person. Consult a physician.

Self-protection of the first aider Use personal protective equipment. See section 8 for more information. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Notes to Physician May cause sensitization of susceptible persons. Treat symptomatically.

5. FIREFIGHTING MEASURES

Suitable extinguishing media
Water spray, dry chemical, carbon dioxide (CO_2), or foam.

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 See section 8. Use personal protective equipment.

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent dust cloud. Sweep up in a manner that does not dispurse dust and shovel into suitable containers for disposal. Dispose according to local regulations, if permitted dissolve in water and rinse to drain.

Methods for cleaning up Keep in suitable and closed containers for disposal. 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. Prevent contact with skin, eyes, and clothing. Do not taste or swallow. 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. Keep out of the reach of children. Keep away from direct sunlight.

Incompatible Products None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
DPD Sulfate 6283-63-2	-	-	Not Established
Boric acid 10043-35-3	STEL: 6 mg/m³ inhalable fraction TWA: 2 mg/m³ inhalable fraction	-	Not Established

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems. Ensure adequate ventilation, especially in confined areas.

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 Wear latex or nitrile gloves.

Respiratory protection None required under normal usage.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state solid Tablet
Appearance White to off-white **Odor** Odorless

Property	Values	Remarks • Method
pH	6	(1 tablet in 10mL of water)
Melting point / freezing point	No information available	
Boiling point / boiling range	No information available	
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 information 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. Extremes of temperature and direct sunlight.
Incompatible materials	None known based on information supplied.
Hazardous decomposition products	None under normal use.

11. TOXICOLOGICAL INFORMATION

Product Information May cause eye, skin, and respiratory tract irritation.

Information on likely routes of exposure

Component identification

Chemical name	ATEmix (oral)	ATEmix (dermal)	Inhalation LC50
DPD Sulfate 6283-63-2	Not Established	Not Established	Not Established
Boric acid 10043-35-3	= 2660 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 0.16 mg/L (Rat) 4 h

Information on toxicological effects

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
DPD Sulfate 6283-63-2	Not Established	Not Established	Not Established	Not Established
Boric acid 10043-35-3	Not Established	Group 2A	Not Established	Not Established

IARC (International Agency for Research on Cancer)
Group 2A - Probably Carcinogenic to Humans

Reproductive toxicity	Product is or contains a chemical which is a known or suspected reproductive hazard. Contains a known or suspected reproductive toxin.
Developmental toxicity	No information available.
Teratogenic	May cause harm to the unborn child.
Target organ effects	No information available.

ATEmix (dermal) 3,129.00 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Toxicity to Algae	Toxicity to Fish	Daphnia Magna (Water Flea)
DPD Sulfate 6283-63-2	Not Established	Not Established	Not Established
Boric acid 10043-35-3	Not Established	1020: 72 h Carassius auratus mg/L LC50 flow-through	115 - 153: 48 h Daphnia magna mg/L EC50

Persistence and degradability
No data is available on the product itself.

Bioaccumulation/Accumulation
No information available.

Chemical name	Log Pow
DPD Sulfate 6283-63-2	Not Established
Boric acid 10043-35-3	-0.757

13. DISPOSAL CONSIDERATIONS

Disposal Methods Dispose of waste product or used containers according to local regulations. Can be incinerated, when in compliance with 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
DPD Sulfate 6283-63-2	Not Established	-	Not Established	Not Established
Boric acid 10043-35-3	Not Established	-	Not Established	Not Established

Chemical name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
DPD Sulfate 6283-63-2	Not Established	Not Established	Not Established	Not Established
Boric acid 10043-35-3	Not Established	Not Established	Not Established	Not Established

Chemical name	California Hazardous Waste Status
DPD Sulfate 6283-63-2	-
Boric acid 10043-35-3	Toxic

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	Complies
EINECS/ELINCS	Does not comply
ENCS	Complies
IECSC	Complies
KECL	Complies
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 does not contain any 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 %
DPD Sulfate 6283-63-2	Not Established
Boric acid 10043-35-3	Not Established

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 does not contain any substances regulated as 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
DPD Sulfate 6283-63-2	Not Established	Not Established	Not Established	Not Established
Boric acid 10043-35-3	Not Established	Not Established	Not Established	Not Established

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	RQ
DPD Sulfate 6283-63-2	-	Not Established	-
Boric acid 10043-35-3	-	Not Established	-

US State Regulations

California Proposition 65

Chemical name	California Proposition 65
DPD Sulfate 6283-63-2	Not Established
Boric acid 10043-35-3	Not Established

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
DPD Sulfate 6283-63-2	Not Established	Not Established	Not Established
Boric acid 10043-35-3	X	Not Established	Not Established

CPSC (Consumer Product Safety Commission) - Specially Regulated Substances

16. OTHER INFORMATION

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

Health hazard 1

Prepared by Regulatory Affairs Department
Issuing Date Nov-15-2010
Revision Date Jan-12-2015
Reason for revision Update to Format 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 Safety Data Sheet

Safety Data Sheet

OSHA format

Issuing Date Jun-17-2015 **Revision Date** Dec-17-2015 **Revision Number** 0

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

Product identifier

Product name **DPD 1R Tablet**

Other means of identification

Product Code(s) **6999A**

Recommended use of the chemical and restrictions on use

Recommended Use Test kit reagent for water testing. Laboratory chemicals. Research and Development. Professional users.

Details of the supplier of the safety data sheet

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

OSHA Regulatory Status

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

EMERGENCY OVERVIEW

Hazard statements

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Appearance White to off-white **Physical state** solid Tablet **Odor** Odorless

Precautionary Statements - Prevention

Do not handle until all safety precautions have been read and understood. Keep container tightly closed. Keep out of reach of children.

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 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.

Other Hazards

May be harmful if swallowed

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	Weight-%
DPD Sulfate	6283-63-2	1
Boric acid	10043-35-3	9

All ingredients may not be listed. Ingredients not listed do not meet the reporting requirements of the OSHA Hazard Communication Standard (HCS) as specified in 29 CFR 1910.1200.

4. FIRST AID MEASURES

First Aid Measures

General advice 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. If symptoms persist, call a physician.

Skin contact Wash off immediately with soap and plenty of water for at least 15 minutes. If symptoms persist, call a physician.

Inhalation Remove to fresh air. If symptoms persist, call a physician.

Ingestion Induce vomiting, but only if victim is fully conscious. Drink plenty of water. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Self-protection of the first aider Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protection recommended in Section 8.

Notes to Physician May cause sensitization of susceptible persons. Treat symptomatically.

5. FIRE-FIGHTING 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 See section 8. Use personal protective equipment.

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent dust cloud. Sweep up in a manner that does not dispurse dust and shovel into suitable containers for disposal. Dispose according to local regulations, if permitted dissolve in water and rinse to drain.

Methods for cleaning up Keep in suitable and closed containers for disposal. 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. Prevent contact with skin, eyes, and clothing. Do not taste or swallow. 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. Keep out of the reach of children. Keep away from direct sunlight.

Incompatible Products None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
DPD Sulfate 6283-63-2	-	-	Not Established
Boric acid 10043-35-3	6 mg/m³ STEL (inhalable fraction, listed under Borate compounds, inorganic) 6 mg/m³ STEL (inhalable fraction) TWA: 2 mg/m³	-	Not Established

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems. Ensure adequate ventilation, especially in confined areas.

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 Wear latex or nitrile gloves.

Respiratory protection None required under normal usage.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state solid Tablet
Appearance White to off-white **Odor** Odorless

Property	Values	Remarks • Method
pH	6	(1 tablet in 10mL of 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	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. Extremes of temperature and direct sunlight.
Incompatible materials	None known based on information supplied.
Hazardous decomposition products	None under normal use.

11. TOXICOLOGICAL INFORMATION

Product Information May cause eye, skin, and respiratory tract irritation.

Information on likely routes of exposure

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
DPD Sulfate 6283-63-2	Not Established	Not Established	Not Established
Boric acid 10043-35-3	= 2660 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 0.16 mg/L (Rat) 4 h

Information on toxicological effects

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
DPD Sulfate 6283-63-2	Not Established	Not Established	Not Established	Not Established
Boric acid 10043-35-3	Not Established	Not Established	Not Established	Not Established

Developmental toxicity	No information available.
Teratogenic	May cause harm to the unborn child.
Target organ effects	No information available.
ATEmix (oral)	4715
ATEmix (dermal)	7632 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Toxicity to Algae	Toxicity to Fish	Daphnia Magna (Water Flea)
DPD Sulfate 6283-63-2	Not Established	Not Established	Not Established
Boric acid 10043-35-3	Not Established	1020: 72 h Carassius auratus mg/L LC50 flow-through	115 - 153: 48 h Daphnia magna mg/L EC50

Persistence and degradability
No data is available on the product itself.

Bioaccumulation/Accumulation
No information available.

Chemical name	Log Pow
DPD Sulfate 6283-63-2	Not Established
Boric acid 10043-35-3	-0.757

13. DISPOSAL CONSIDERATIONS

Disposal Methods Dispose of waste product or used containers according to local regulations. Can be incinerated, when in compliance with 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
DPD Sulfate 6283-63-2	Not Established	-	Not Established	Not Established
Boric acid 10043-35-3	Not Established	-	Not Established	Not Established

Chemical name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
DPD Sulfate 6283-63-2	Not Established	Not Established	Not Established	Not Established
Boric acid 10043-35-3	Not Established	Not Established	Not Established	Not Established

Chemical name	California Hazardous Waste Status
DPD Sulfate 6283-63-2	-
Boric acid 10043-35-3	-

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	Complies
EINECS/ELINCS	Does not comply
ENCS	Complies
IECSC	Complies
KECL	Complies
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 does not contain any 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 %
DPD Sulfate 6283-63-2	Not Established
Boric acid 10043-35-3	Not Established

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 does not contain any substances regulated as 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
DPD Sulfate 6283-63-2	Not Established	Not Established	Not Established	Not Established
Boric acid 10043-35-3	Not Established	Not Established	Not Established	Not Established

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	RQ
DPD Sulfate 6283-63-2	-	Not Established	-
Boric acid 10043-35-3	-	Not Established	-

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

Chemical name	California Proposition 65
DPD Sulfate 6283-63-2	Not Established
Boric acid 10043-35-3	Not Established

U.S. State Right-to-Know Regulations

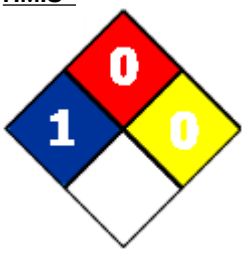
Chemical name	New Jersey	Massachusetts	Pennsylvania
DPD Sulfate 6283-63-2	Not Established	Not Established	Not Established
Boric acid 10043-35-3	X	Not Established	Not Established

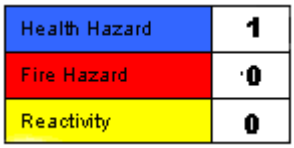
CPSC (Consumer Product Safety Commission) - Specially Regulated Substances

16. OTHER INFORMATION

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

HMIS **Health hazard** 1 **Flammability** 0 **Stability** 0





Prepared by Regulatory Affairs Department
Issuing Date Jun-17-2015
Revision Date Dec-17-2015
Revision note Boric acid classification differs between the US and EU. It is not classified in the US but it is in the EU.
Reason for revision (M)SDS sections updated 2 11 12 16

Disclaimer

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End of Safety Data Sheet

Safety Data Sheet

Issuing Date Nov-15-2010 **Revision Date** Jan-12-2015 **Revision Number** 0

1. Identification of the Substance/Preparation and of the Company/Undertaking

Product identifier

Product name **DPD 1R Test Tablet**

Other means of identification

Product Code(s) **6999**

Recommended use of the chemical and restrictions on use

Recommended Use Test kit reagent for water testing. Laboratory chemicals. Research and Development. Professional users.

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

Carcinogenicity	Category 1B
Reproductive Toxicity	Category 1B

EMERGENCY OVERVIEW

DANGER

Hazard statements
May cause cancer. May damage fertility or the unborn child.

Appearance White to off-white **Physical state** solid Tablet **Odor** Odorless

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.

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention.

Precautionary Statements - Storage

Store locked up.

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant.

Other Hazards
May be harmful in contact with skin

Unknown Acute Toxicity
59% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature of the preparation Mixture of organic and inorganic compounds.

Chemical name	CAS-No	Weight %
N,N-Diethyl-p-phenylenediamine sulfate	6283-63-2	1
Excipient	-	1-10
Boric acid	10043-35-3	9
Citric acid	77-92-9	13
Carbonate salt	-	10-20
Excipient	-	10-20
Phosphate salt	-	20-30

LaMotte Company proprietary formulation under the State of New Jersey Trade Secret Protection Law, assigned the NJTSRN 80100291-5003p, and may be disclosed only in a medical emergency

4. FIRST AID MEASURES

FIRST AID MEASURES

General advice Do not get in eyes, on skin, or on clothing.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash off immediately with soap and plenty of water for at least 15 minutes while removing all contaminated clothing and shoes. Consult a physician.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and contact emergency personnel. Call a physician immediately.

Ingestion Induce vomiting, but only if victim is fully conscious. Drink plenty of water. Clean mouth with water. Never give anything by mouth to an unconscious person. Consult a physician.

Protection of First-aiders 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.

Notes to Physician May cause sensitization of susceptible persons. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Water spray, dry chemical, carbon dioxide (CO_2), or foam.

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 Refer to Section 8. Use personal protective equipment.

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent dust cloud. Sweep up in a manner that does not dispurse dust and shovel into suitable containers for disposal. Dispose according to local regulations, if permitted dissolve in water and rinse to drain.

Methods for cleaning up Keep in suitable and closed containers for disposal. 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. Prevent contact with skin, eyes, and clothing. Do not ingest. 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. Keep out of the reach of children. Keep away from direct sunlight.

Incompatible Products None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
N,N-Diethyl-p-phenylenediamine sulfate 6283-63-2	-	-	None Established
Excipient	TWA: 10 mg/m³	TWA: 15 mg/m³ TWA: 5 mg/m³	TWA: 1 mg/m³
Boric acid 10043-35-3	6 mg/m³ STEL (inhalable fraction, listed under Borate compounds, inorganic) 6 mg/m³ STEL (inhalable fraction) TWA: 2 mg/m³	-	None Established
Citric acid 77-92-9	-	-	None Established
Carbonate salt	-	-	None Established
Excipient	-	-	None Established
Phosphate salt	-	-	None Established

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems. Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Eye/face Protection	Safety glasses with side-shields. Avoid contact with eyes.
Skin and body protection	Wear latex or nitrile gloves.
Respiratory protection	None required under normal usage.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Wear suitable gloves and eye/face protection. Wash hands and face before breaks and immediately after handling the product. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	solid Tablet		
Appearance	White to off-white	**Odor**	Odorless

Property	**Values**	**Remarks • Method**
pH	6	(1 tablet in 10mL of water)
Melting point/freezing point	No information available	
Boiling Point/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	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. Extremes of temperature and direct sunlight.
Incompatible materials	None known based on information supplied.
Hazardous decomposition products	None under normal use.

11. TOXICOLOGICAL INFORMATION

Product Information May cause eye, skin, and respiratory tract irritation.

Information on likely routes of exposure

Component Information

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation
N,N-Diethyl-p-phenylenediamine sulfate 6283-63-2	None Established	None Established	None Established
Excipient	> 5 g/kg (Rat)	> 2 g/kg (Rabbit)	> 5800 mg/m³ (Rat) 4 h
Boric acid 10043-35-3	= 2660 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 0.16 mg/L (Rat) 4 h
Citric acid 77-92-9	= 3000 mg/kg (Rat)	None Established	None Established
Carbonate salt	= 1870 mg/kg (Rat)	None Established	None Established
Excipient	> 10 g/kg (Rat)	None Established	None Established
Phosphate salt	None Established	> 4640 mg/kg (Rabbit)	None Established

Information on toxicological effects

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
N,N-Diethyl-p-phenylenediamine sulfate 6283-63-2	-	None Established	None Established	-
Excipient	-	None Established	None Established	-
Boric acid 10043-35-3	-	Group 2A	None Established	X
Citric acid 77-92-9	-	None Established	None Established	-
Carbonate salt	-	None Established	None Established	-
Excipient	-	None Established	None Established	-
Phosphate salt	-	None Established	None Established	-

IARC: (International Agency for Research on Cancer)
Group 2A - Probably Carcinogenic to Humans

Reproductive toxicity Product is or contains a chemical which is a known or suspected reproductive hazard. Contains a known or suspected reproductive toxin.

Developmental toxicity No information available.

Teratogenic May cause harm to the unborn child.

Target organ effects No information available.

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (dermal) 3129 mg/kg

LD50 Oral: Oral Rat LD50: 195mg/kg for N,N-Diethyl-p-phenylenediamine sulfate

12. ECOLOGICAL INFORMATION

Ecotoxicity

Unknown Aquatic Toxicity 78.3% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical name	Toxicity to Algae	Toxicity to Fish	Daphnia Magna (Water Flea)
N,N-Diethyl-p-phenylenediamine sulfate 6283-63-2	None Established	None Established	None Established
Excipient	None Established	None Established	None Established
Boric acid	None Established	1020: 72 h Carassius auratus	115 - 153: 48 h Daphnia magna

10043-35-3		mg/L LC50 flow-through	mg/L EC50
Citric acid 77-92-9	None Established	1516: 96 h Lepomis macrochirus mg/L LC50 static	120: 72 h Daphnia magna mg/L EC50
Carbonate salt	None Established	None Established	None Established
Excipient	None Established	None Established	None Established
Phosphate salt	None Established	None Established	None Established

Persistence and degradability
No data is available on the product itself.

Bioaccumulation/Accumulation
No information available.

Chemical name	Log Pow
N,N-Diethyl-p-phenylenediamine sulfate 6283-63-2	None Established
Excipient	None Established
Boric acid 10043-35-3	-0.757
Citric acid 77-92-9	-1.72
Carbonate salt	None Established
Excipient	None Established
Phosphate salt	None Established

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method Dispose of in accordance with local regulations. Can be incinerated, when in compliance with local regulations. Should not be released into the environment.

Contaminated packaging Dispose of in accordance with local regulations.

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
N,N-Diethyl-p-phenylenediamine sulfate 6283-63-2	None Established	-	None Established	None Established
Excipient	None Established	-	None Established	None Established
Boric acid 10043-35-3	None Established	-	None Established	None Established
Citric acid 77-92-9	None Established	-	None Established	None Established
Carbonate salt	None Established	-	None Established	None Established
Excipient	None Established	-	None Established	None Established
Phosphate salt	None Established	-	None Established	None Established

Chemical name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
N,N-Diethyl-p-phenylenediamine sulfate 6283-63-2	None Established	None Established	None Established	None Established
Excipient	None Established	None Established	None Established	None Established
Boric acid 10043-35-3	None Established	None Established	None Established	None Established

Citric acid 77-92-9	None Established	None Established	None Established	None Established
Carbonate salt	None Established	None Established	None Established	None Established
Excipient	None Established	None Established	None Established	None Established
Phosphate salt	None Established	None Established	None Established	None Established

Chemical name	California Hazardous Waste Status
N,N-Diethyl-p-phenylenediamine sulfate 6283-63-2	-
Excipient	-
Boric acid 10043-35-3	-
Citric acid 77-92-9	-
Carbonate salt	-
Excipient	-
Phosphate salt	-

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	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
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 Commercial Chemical Substances/EU 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

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any 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,N-Diethyl-p-phenylenediamine sulfate 6283-63-2	None Established
Excipient	None Established
Boric acid 10043-35-3	None Established
Citric acid 77-92-9	None Established
Carbonate salt	None Established
Excipient	None Established
Phosphate salt	None Established

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

Clean Water Act

This product does not contain any substances regulated as 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,N-Diethyl-p-phenylenediamine sulfate 6283-63-2	None Established	None Established	None Established	None Established
Excipient	None Established	None Established	None Established	None Established
Boric acid 10043-35-3	None Established	None Established	None Established	None Established
Citric acid 77-92-9	None Established	None Established	None Established	None Established
Carbonate salt	None Established	None Established	None Established	None Established
Excipient	None Established	None Established	None Established	None Established
Phosphate salt	None Established	None Established	None Established	None Established

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	RQ
N,N-Diethyl-p-phenylenediamine sulfate 6283-63-2	-	None Established	-
Excipient	-	None Established	-
Boric acid 10043-35-3	-	None Established	-
Citric acid 77-92-9	-	None Established	-
Carbonate salt	-	None Established	-

Excipient	-	None Established	-
Phosphate salt	-	None Established	-

U.S. State Regulations

California Proposition 65

Chemical name	California Prop. 65
N,N-Diethyl-p-phenylenediamine sulfate 6283-63-2	None Established
Excipient	None Established
Boric acid 10043-35-3	None Established
Citric acid 77-92-9	None Established
Carbonate salt	None Established
Excipient	None Established
Phosphate salt	None Established

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
N,N-Diethyl-p-phenylenediamine sulfate 6283-63-2	None Established	None Established	None Established
Excipient	X	X	X
Boric acid 10043-35-3	None Established	None Established	None Established
Citric acid 77-92-9	None Established	None Established	None Established
Carbonate salt	None Established	None Established	None Established
Excipient	None Established	None Established	None Established
Phosphate salt	None Established	None Established	None Established

16. OTHER INFORMATION

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

HMIS **Health hazard** 1 **Flammability** 0 **Physical hazards** 0 **Personal precautions** N/A

Prepared by Regulatory Affairs Department

Issuing Date	Nov-15-2010
Revision Date	Jan-16-2015
Reason for revision	Update to Format 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 MSDS

Safety Data Sheet

OSHA format

Issuing Date Jun-01-2015 **Revision Number** 0

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

Product identifier

Product name **MANGANOUS SULFATE SOLUTION**

***

Other means of identification

Product Code(s) **4167**

Recommended use of the chemical and restrictions on use

Recommended Use Laboratory chemicals. Industrial (not for food or food contact use). Chemical additive. Swimming pool chemicals.

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

Specific target organ toxicity (repeated exposure)	Category 2

EMERGENCY OVERVIEW

WARNING

Hazard statements
May cause damage to organs through prolonged or repeated exposure.

Appearance Clear pink **Physical state** liquid **Odor** None

Precautionary Statements - Prevention
Do not breathe dust/fume/gas/mist/vapors/spray.

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 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/container to an approved waste disposal plant.

Other Hazards
May be harmful if swallowed Toxic to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	Weight-%
Manganese sulfate monohydrate	10034-96-5	36

4. FIRST AID MEASURES

First Aid Measures

General advice 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. Consult a physician if necessary.

Inhalation Remove to fresh air. Call a physician immediately.

Ingestion DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Call a physician immediately.

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. FIREFIGHTING MEASURES

Suitable extinguishing media
Water spray, dry chemical, carbon dioxide (CO_2), or foam.

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 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 Use personal protective equipment. 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). Following product recovery, flush area with water.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Use only in area provided with appropriate exhaust ventilation. Prevent contact with skin, eyes, and clothing. Do not taste or swallow. 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. Store away from incompatible materials. Keep out of the reach of children.

Incompatible Products Strong bases. Metals.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Manganese sulfate monohydrate 10034-96-5	TWA: 0.02 mg/m³ Mn TWA: 0.1 mg/m³ Mn***	(vacated) Ceiling: 5 mg/m³ Ceiling: 5 mg/m³ Mn***	IDLH: 500 mg/m³ Mn TWA: 1 mg/m³ Mn STEL: 3 mg/m³ Mn***

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).

Skin and body protection Gloves & Lab Coat.

Respiratory protection Use only with adequate ventilation. In case of insufficient ventilation wear suitable respiratory equipment.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state liquid
Appearance Clear pink **Odor** None

Property	Values	Remarks • Method
pH	3	
Melting point / freezing point	No information available	
Boiling point / boiling range	No information available	
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 information available
Water solubility	No information available
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 under recommended storage conditions.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Excessive heat.
Incompatible materials	Strong bases. Metals.
Hazardous decomposition products	Sulfur oxides (SOx). Manganese oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Component identification

Chemical name	ATEmix (oral)	ATEmix (dermal)	Inhalation LC50
Manganese sulfate monohydrate 10034-96-5	= 782 mg/kg (Rat)***	Not Established	Not Established

Information on toxicological effects

Chemical name	ACGIH	IARC	NTP	OSHA
Manganese sulfate monohydrate 10034-96-5	Not Established	Not Established	Not Established	Not Established

Chronic toxicity Chronic manganese poisoning primarily involves the central nervous system. Chronic manganese poisoning can result from excessive inhalation and ingestion. Early symptoms include sluggishness, sleepiness, and weakness in the legs. Kidney effects. Chronic inhalation exposure can cause lung damage.

ATEmix (oral) 2,172.00 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

Unknown Aquatic Toxicity 64 % of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical name	Toxicity to Algae	Toxicity to Fish	Daphnia Magna (Water Flea)
Manganese sulfate monohydrate 10034-96-5	Not Established	Not Established	Not Established

Persistence and degradability

No information available.

Bioaccumulation/Accumulation
No information available.

Chemical name	Log Pow
Manganese sulfate monohydrate 10034-96-5	Not Established

13. DISPOSAL CONSIDERATIONS

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

Contaminated packaging Do not reuse empty containers.

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Manganese sulfate monohydrate 10034-96-5	Not Established	-	Not Established	Not Established

Chemical name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Manganese sulfate monohydrate 10034-96-5	Not Established	Not Established	Not Established	Not Established

Chemical name	California Hazardous Waste Status
Manganese sulfate monohydrate 10034-96-5	-

14. TRANSPORT INFORMATION

DOT Not regulated

IATA Not regulated

IMDG/IMO Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Does not comply
EINECS/ELINCS	Does not comply
ENCS	Complies
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 %
Manganese sulfate monohydrate 10034-96-5	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 does not contain any substances regulated as 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
Manganese sulfate monohydrate 10034-96-5	Not Established	Not Established	Not Established	Not Established

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	RQ
Manganese sulfate monohydrate 10034-96-5	-	Not Established	-

US State Regulations

California Proposition 65

Chemical name	California Proposition 65
Manganese sulfate monohydrate 10034-96-5	Not Established

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Manganese sulfate monohydrate 10034-96-5	X***	Not Established	X***

CPSC (Consumer Product Safety Commission) - Specially Regulated Substances

16. OTHER INFORMATION

NFPA

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

Health hazard 2 **Flammability** 0 **Stability** 0

Health Hazard	2
Fire Hazard	0
Reactivity	0

Prepared by	Regulatory Affairs Department
Issuing Date	Jun-01-2015
Reason for revision	MSDS was reviewed per Canada request - Canada requires MSDS to be dated within 3 years of the request

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 Safety Data Sheet

Safety Data Sheet

Issuing Date Jul-06-2015 **Revision Number** 0

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

Product identifier

Product name **Methyl Red 1%**

Other means of identification

Product Code(s) **2238**

UN-No 1170

Recommended use of the chemical and restrictions on use

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

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
Serious eye damage/eye irritation	Category 2A
Germ cell mutagenicity	Category 1B
Carcinogenicity	Category 1A
Reproductive Toxicity	Category 1A
Specific target organ toxicity (single exposure)	Category 2
Specific target organ toxicity (repeated exposure)	Category 1
Physical hazards Flammable Liquids.	Category 2

EMERGENCY OVERVIEW

DANGER

Hazard statements

Harmful if swallowed. Causes serious eye irritation. May cause genetic defects. May cause cancer. May damage fertility or the unborn child. May cause damage to organs. Causes damage to organs through prolonged or repeated exposure. .
Highly flammable liquid and vapor.

Appearance red transparent	**Physical state** liquid	**Odor** Alcohol

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. Wear eye/face protection. Do not breathe dust/fume/gas/mist/vapors/spray. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge.

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 (or hair): Remove immediately all contaminated clothing. Rinse skin with water
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
In case of fire: Use CO2, dry chemical, or foam for extinction

Precautionary Statements - Storage
Store locked up. Store in a well-ventilated place. Keep cool.

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant.

Other Hazards
Toxic to aquatic life with long lasting effects

Unknown Acute Toxicity
1% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Family Ethanol solution.

Chemical name	CAS No	Weight-%
Sodium hydroxide	1310-73-2	0.1
Methyl red	493-52-7	1
Water	7732-18-5	<3
Methyl alcohol	67-56-1	4
Ethyl alcohol	64-17-5	92

4. FIRST AID MEASURES

First Aid Measures

General advice Do not get in eyes, on skin, or on clothing.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash skin with soap and water. If irritation develops or persists, consult physician.

Inhalation Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and contact emergency personnel. Call a physician immediately.

Ingestion Drink 1 or 2 glasses of water. Induce vomiting, but only if victim is fully conscious. Consult a physician. Rinse mouth.

Self-protection of the first aider Use personal protective equipment. Do not use mouth-to-mouth method if victim ingested or

inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Water spray, dry chemical, carbon dioxide (CO_2), or foam.

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 See section 8.

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container.

Methods for cleaning up Soak up with inert absorbent material. 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. Prevent contact with skin, eyes, and clothing. Do not taste or swallow. 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. Keep away from heat and sources of ignition. Keep out of the reach of children.

Incompatible Products Strong inorganic acids and oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sodium hydroxide 1310-73-2	Ceiling: 2 mg/m³	TWA: 2 mg/m³	IDLH: 10 mg/m³ Ceiling: 2 mg/m³
Methyl red 493-52-7	-	-	Not Established
Water 7732-18-5	-	-	Not Established
Methyl alcohol 67-56-1	250 ppm STEL TWA: 200 ppm	TWA: 200 ppm TWA: 260 mg/m³	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m³ STEL: 250 ppm STEL: 325 mg/m³
Ethyl alcohol 64-17-5	1000 ppm STEL	TWA: 1000 ppm TWA: 1900 mg/m³	IDLH: 3300 ppm TWA: 1000 ppm

			TWA: 1900 mg/m³

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).

Skin and body protection Wear protective gloves/clothing.

Respiratory protection Use only with adequate ventilation.

Hygiene Measures Do not eat, drink or smoke when using this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state liquid
Appearance red transparent **Odor** Alcohol

Property	**Values**	**Remarks • Method**
pH		No information available
Melting point / freezing point	No information available	
Boiling point / boiling range	78.4 °C / 173 °F	Ethanol
Flash point	ca. 17 °C / 63 °F	Closed cup for 90% Ethyl Alcohol
Evaporation rate		
Flammability (solid, gas)	No information available	
Flammability Limit in Air		
Upper flammability limit:	19.0 for Ethanol	
Lower flammability limit:	3.3 for Ethanol	
Vapor pressure	48 mmHg @ 20°C	for SDA (3A) Ethyl Alcohol
Vapor density	1 (Air=1)	
Specific gravity	No information available	
Water solubility	No information available	
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 under normal conditions of use and storage.
Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid Heat, flames and sparks.
Incompatible materials Strong inorganic acids and oxidizing agents.
Hazardous decomposition products Carbon oxides (COx).

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Sodium hydroxide 1310-73-2	Not Established	= 1350 mg/kg (Rabbit)	Not Established
Methyl red 493-52-7	Not Established	Not Established	Not Established
Water 7732-18-5	> 90 mL/kg (Rat)	Not Established	Not Established
Methyl alcohol 67-56-1	= 6200 mg/kg (Rat)	= 15800 mg/kg (Rabbit)	= 22500 ppm (Rat) 8 h = 64000 ppm (Rat) 4 h
Ethyl alcohol 64-17-5	= 7060 mg/kg (Rat)	Not Established	= 124.7 mg/L (Rat) 4 h

Information on toxicological effects

Chemical name	ACGIH	IARC	NTP	OSHA
Sodium hydroxide 1310-73-2	Not Established	Not Established	Not Established	Not Established
Methyl red 493-52-7	Not Established	Group 3	Not Established	Not Established
Water 7732-18-5	Not Established	Not Established	Not Established	Not Established
Methyl alcohol 67-56-1	Not Established	Not Established	Not Established	Not Established
Ethyl alcohol 64-17-5	A3	Group 1	Known	X

Chronic toxicity Ethanol has been shown to be a reproductive toxin only when consumed as an alcoholic beverage.

ATEmix (oral) 1886
ATEmix (dermal) 7500 mg/kg
ATEmix (inhalation-dust/mist) 12.5 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

Unknown Aquatic Toxicity 3.872 % of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical name	Toxicity to Algae	Toxicity to Fish	Daphnia Magna (Water Flea)
Sodium hydroxide 1310-73-2	Not Established	45.4: 96 h Oncorhynchus mykiss mg/L LC50 static	Not Established
Methyl red 493-52-7	Not Established	Not Established	Not Established
Water 7732-18-5	Not Established	Not Established	Not Established
Methyl alcohol 67-56-1	Not Established	13500 - 17600: 96 h Lepomis macrochirus mg/L LC50 flow-through 18 - 20: 96 h Oncorhynchus mykiss mL/L LC50 static 19500 - 20700: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 28200: 96 h Pimephales promelas mg/L LC50 flow-through 100: 96 h Pimephales promelas mg/L LC50 static	Not Established
Ethyl alcohol 64-17-5	Not Established	12.0 - 16.0: 96 h Oncorhynchus mykiss mL/L LC50 static 13400 - 15100: 96 h Pimephales	9268 - 14221: 48 h Daphnia magna mg/L LC50 10800: 24 h Daphnia magna mg/L EC50 2: 48

		promelas mg/L LC50 flow-through 100: 96 h Pimephales promelas mg/L LC50 static	h Daphnia magna mg/L EC50 Static

Persistence and degradability
No information available.

Bioaccumulation/Accumulation
No information available.

Chemical name	Log Pow
Sodium hydroxide 1310-73-2	Not Established
Methyl red 493-52-7	Not Established
Water 7732-18-5	Not Established
Methyl alcohol 67-56-1	-0.77
Ethyl alcohol 64-17-5	-0.32

13. DISPOSAL CONSIDERATIONS

Disposal Methods Dispose of waste product or used containers according to local regulations. This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated packaging Do not reuse empty containers.

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Sodium hydroxide 1310-73-2	Not Established	-	Not Established	Not Established
Methyl red 493-52-7	Not Established	-	Not Established	Not Established
Water 7732-18-5	Not Established	-	Not Established	Not Established
Methyl alcohol 67-56-1	Not Established	Included in waste stream: F039	Not Established	Ignitable waste
Ethyl alcohol 64-17-5	Not Established	-	Not Established	Not Established

Chemical name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Sodium hydroxide 1310-73-2	Not Established	Not Established	Not Established	Not Established
Methyl red 493-52-7	Not Established	Not Established	Not Established	Not Established
Water 7732-18-5	Not Established	Not Established	Not Established	Not Established
Methyl alcohol 67-56-1	Not Established	Not Established	Not Established	Not Established
Ethyl alcohol 64-17-5	Not Established	Not Established	Not Established	Not Established

Chemical name	California Hazardous Waste Status
Sodium hydroxide 1310-73-2	-
Methyl red 493-52-7	-

Water 7732-18-5	-
Methyl alcohol 67-56-1	-
Ethyl alcohol 64-17-5	-

14. TRANSPORT INFORMATION

DOT

Proper shipping name	ETHANOL SOLUTION (Ethyl Alcohol Solution)
UN-No	1170
Hazard Class	3
Packing group	II

IATA

Proper shipping name	ETHANOL SOLUTION (Ethyl Alcohol Solution)
UN-No	1170
Hazard Class	3
Packing group	II

IMDG/IMO

Proper shipping name	ETHANOL SOLUTION (Ethyl Alcohol Solution)
UN-No	1170
Hazard Class	3
Packing group	II

15. REGULATORY INFORMATION

International Inventories

TSCA	Does not comply
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Does not comply
IECSC	Complies
KECL	Complies
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 %
Sodium hydroxide	Not Established

1310-73-2	
Methyl red 493-52-7	Not Established
Water 7732-18-5	Not Established
Methyl alcohol 67-56-1	1.0
Ethyl alcohol 64-17-5	Not Established

SARA 311/312 Hazard Categories

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

CWA (Clean Water Act)

This product does not contain any substances regulated as 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
Sodium hydroxide 1310-73-2	Not Established	Not Established	Not Established	Not Established
Methyl red 493-52-7	Not Established	Not Established	Not Established	Not Established
Water 7732-18-5	Not Established	Not Established	Not Established	Not Established
Methyl alcohol 67-56-1	Not Established	Not Established	Not Established	Not Established
Ethyl alcohol 64-17-5	Not Established	Not Established	Not Established	Not Established

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
Sodium hydroxide 1310-73-2	1000 lb	Not Established	RQ 1000 lb final RQ RQ 454 kg final RQ
Methyl red 493-52-7	-	Not Established	-
Water 7732-18-5	-	Not Established	-
Methyl alcohol 67-56-1	5000 lb	Not Established	RQ 5000 lb final RQ RQ 2270 kg final RQ
Ethyl alcohol 64-17-5	-	Not Established	-

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

(Ethyl alcohol is only considered a Proposition 65 cancer and developmental hazard when it is ingested as an alcoholic beverage)

Chemical name	California Proposition 65
Sodium hydroxide 1310-73-2	Not Established
Methyl red 493-52-7	Not Established
Water 7732-18-5	Not Established
Methyl alcohol 67-56-1	Developmental
Ethyl alcohol 64-17-5	Carcinogen

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Sodium hydroxide 1310-73-2	X	X	X
Methyl red 493-52-7	Not Established	Not Established	Not Established
Water 7732-18-5	Not Established	Not Established	X
Methyl alcohol 67-56-1	X	X	X
Ethyl alcohol 64-17-5	X	X	X

CPSC (Consumer Product Safety Commission) - Specially Regulated Substances

Chemical name	CPSC (Consumer Product Safety Commission) - Specially Regulated Substances
Sodium hydroxide 1310-73-2	Banned, 16 CFR 1500.17 (>=10% by weight in liquid drain cleaners); Add POISON to label, 16 CFR 1500.129 (>=10%, free or chemically unneutralized)
Methyl alcohol 67-56-1	Special labeling, 16 CFR 1500.14 (including mixtures containing >=4% by weight)

16. OTHER INFORMATION

NFPA **Health hazard** 1 **Flammability** 3 **Instability** 0 **Physical and Chemical Hazards** N/A

HMIS **Health hazard** 2 **Flammability** 3 **Stability** 0

Prepared by Regulatory Affairs Department
Issuing Date Jul-06-2015
Revision Date Jul-06-2015
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

Safety Data Sheet

OSHA format

Issuing Date May-27-2015 **Revision Number** 0

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

Property	Values	Remarks • Method
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/m³ (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 components(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

Prepared by Regulatory Affairs Department
Issuing Date May-27-2015

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 Safety Data Sheet

Safety Data Sheet

Issuing Date Apr-30-2015 **Revision Number** 0

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 CO_2.

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/m³ TWA: 0.002 mg/m³	TWA: 0.1 mg/m³ TWA: 0.2 mg/m³ TWA: 5 µg/m³ Ceiling: 0.3 mg/m³ Ceiling: 0.6 mg/m³	IDLH: 9 mg/m³
Manganese sulfate monohydrate 10034-96-5	TWA: 0.02 mg/m³ TWA: 0.1 mg/m³	Ceiling: 5 mg/m³	IDLH: 500 mg/m³ TWA: 1 mg/m³ STEL: 3 mg/m³
Ammonium chloride	20 mg/m³ STEL (fume)	-	TWA: 10 mg/m³

12125-02-9	TWA: 10 mg/m³		STEL: 20 mg/m³

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
Appearance Gray **Odor** Slight

Property	Values	Remarks • Method
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	

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 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/m³ (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 components(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

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

Safety Data Sheet

Issuing Date Jan-13-2015 **Revision Number** 0

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

Product identifier

Product name **Phenolphthalein Indicator 1%**

Other means of identification

Product Code(s) **2246**
UN-No 1170

Recommended use of the chemical and restrictions on use

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

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
Germ cell mutagenicity	Category 1B
Carcinogenicity	Category 1A
Reproductive Toxicity	Category 1A
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 1
Flammable Liquids	Category 2

EMERGENCY OVERVIEW

DANGER

Hazard statements

Causes serious eye irritation. May cause genetic defects. May cause cancer. May damage fertility or the unborn child. May cause respiratory irritation. May cause drowsiness or dizziness. Causes damage to organs through prolonged or repeated exposure. Highly flammable liquid and vapor.

Appearance Clear, colorless **Physical state** liquid **Odor** Alcohol

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. Wear eye/face protection. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area.

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

Precautionary Statements - Storage
Store locked up. Store in a well-ventilated place. Keep container tightly closed.

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant.

Other Hazards
May be harmful if swallowed Toxic to aquatic life with long lasting effects

Unknown Acute Toxicity
0% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	Weight-%
Phenolphthalein	77-09-8	<1
Methyl alcohol	67-56-1	3
Ethyl alcohol	64-17-5	58

4. FIRST AID MEASURES

First Aid Measures

General advice Do not get in eyes, on skin, or on clothing. If symptoms persist, call a physician.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash off immediately with plenty of water for at least 15 minutes. Consult a physician if necessary.

Inhalation IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician immediately.

Ingestion Drink 1 or 2 glasses of water. Do not induce vomiting without medical advice. Call a physician immediately. Rinse mouth.

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. Avoid contact with eyes, skin and clothing.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Water spray. Dry chemical. Carbon dioxide (CO2). Foam.

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 Ensure adequate ventilation. Remove all sources of ignition. Use personal protection recommended in Section 8.

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Dispose of contents/containers in accordance with local regulations.

Methods for cleaning up 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. Do not taste or swallow. Do not eat, drink or smoke when using this product. Avoid contact with skin, eyes or clothing.

Conditions for safe storage, including any incompatibilities

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Separate from acids. Keep away from oxidizing agents. Keep out of the reach of children.

Incompatible Products Nitric acid. Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Phenolphthalein 77-09-8	-	-	Not Established
Methyl alcohol 67-56-1	250 ppm STEL TWA: 200 ppm	TWA: 200 ppm TWA: 260 mg/m^3	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m^3 STEL: 250 ppm STEL: 325 mg/m^3
Ethyl alcohol 64-17-5	1000 ppm STEL	TWA: 1000 ppm TWA: 1900 mg/m^3	IDLH: 3300 ppm TWA: 1000 ppm TWA: 1900 mg/m^3

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).

Skin and body protection Wear protective gloves/protective clothing/eye protection/face protection. Protective gloves. Nitrile rubber.

Respiratory protection Use only with adequate ventilation.

Hygiene Measures Do not eat, drink or smoke when using this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state liquid
Appearance Clear, colorless **Odor** Alcohol

Property	Values	Remarks • Method
pH		
Melting point / freezing point	No information available	
Boiling point / boiling range	No information available	
Flash point	22 °C	(Calculated based on percent denatured alcohol)
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	No information available	
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 under recommended storage conditions.
Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid Heat, flames and sparks.
Incompatible materials Nitric acid. Strong oxidizing agents.
Hazardous decomposition products Carbon oxides (COx).

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Phenolphthalein 77-09-8	Not Established	Not Established	Not Established

Methyl alcohol 67-56-1	= 6200 mg/kg (Rat)	= 15800 mg/kg (Rabbit)	= 22500 ppm (Rat) 8 h = 64000 ppm (Rat) 4 h
Ethyl alcohol 64-17-5	= 7060 mg/kg (Rat)	Not Established	= 124.7 mg/L (Rat) 4 h

Information on toxicological effects

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Phenolphthalein 77-09-8	-	Group 2B	Reasonably Anticipated	X
Methyl alcohol 67-56-1	-	Not Established	Not Established	-
Ethyl alcohol 64-17-5	A3	Group 1	Known	X

IARC (International Agency for Research on Cancer)
Group 2B - Possibly Carcinogenic to Humans
NTP (National Toxicology Program)
Known - Known Carcinogen
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present

Chronic toxicity Ethanol has been shown to be a reproductive toxin only when consumed as an alcoholic beverage. Prolonged skin contact may cause skin irritation and/or dermatitis.

ATEmix (oral) 3546 mg/kg
ATEmix (dermal) 10638 mg/kg
ATEmix (inhalation-dust/mist) 17.8 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

Unknown Aquatic Toxicity 0.85 % of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical name	Toxicity to Algae	Toxicity to Fish	Daphnia Magna (Water Flea)
Phenolphthalein 77-09-8	Not Established	Not Established	Not Established
Methyl alcohol 67-56-1	Not Established	13500 - 17600: 96 h Lepomis macrochirus mg/L LC50 flow-through 18 - 20: 96 h Oncorhynchus mykiss mL/L LC50 static 19500 - 20700: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 28200: 96 h Pimephales promelas mg/L LC50 flow-through 100: 96 h Pimephales promelas mg/L LC50 static	Not Established
Ethyl alcohol 64-17-5	Not Established	12.0 - 16.0: 96 h Oncorhynchus mykiss mL/L LC50 static 13400 - 15100: 96 h Pimephales promelas mg/L LC50 flow-through 100: 96 h Pimephales promelas mg/L LC50 static	9268 - 14221: 48 h Daphnia magna mg/L LC50 10800: 24 h Daphnia magna mg/L EC50 2: 48 h Daphnia magna mg/L EC50 Static

Persistence and degradability

Ethanol: When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released into water, this material may evaporate to a moderate extent. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to be readily removed from the atmosphere by dry and wet deposition. When released into the air, this material is expected to have a half-life between 1 and 10 days.

Bioaccumulation/Accumulation

No information available.

Chemical name	Log Pow
Phenolphthalein 77-09-8	Not Established

Methyl alcohol 67-56-1	-0.77
Ethyl alcohol 64-17-5	-0.32

13. DISPOSAL CONSIDERATIONS

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

Contaminated packaging Do not reuse empty containers.

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Phenolphthalein 77-09-8	Not Established	-	Not Established	Not Established
Methyl alcohol 67-56-1	Not Established	Included in waste stream: F039	Not Established	Ignitable waste
Ethyl alcohol 64-17-5	Not Established	-	Not Established	Not Established

Chemical name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Phenolphthalein 77-09-8	Not Established	Not Established	Not Established	Not Established
Methyl alcohol 67-56-1	Not Established	Not Established	Not Established	Not Established
Ethyl alcohol 64-17-5	Not Established	Not Established	Not Established	Not Established

Chemical name	California Hazardous Waste Status
Phenolphthalein 77-09-8	-
Methyl alcohol 67-56-1	-
Ethyl alcohol 64-17-5	-

14. TRANSPORT INFORMATION

DOT

Proper shipping name ETHANOL SOLUTION (Ethyl Alcohol Solution)
UN-No 1170
Hazard Class 3
Packing group II

IATA

Proper shipping name ETHANOL SOLUTION (Ethyl Alcohol Solution)
UN-No 1170
Hazard Class 3
Packing group II

IMDG/IMO

Proper shipping name ETHANOL SOLUTION (Ethyl Alcohol Solution)
UN-No 1170
Hazard Class 3
Packing group II

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
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 %
Phenolphthalein 77-09-8	Not Established
Methyl alcohol 67-56-1	1.0
Ethyl alcohol 64-17-5	Not Established

SARA 311/312 Hazard Categories

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

CWA (Clean Water Act)

This product does not contain any substances regulated as 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
Phenolphthalein 77-09-8	Not Established	Not Established	Not Established	Not Established
Methyl alcohol 67-56-1	Not Established	Not Established	Not Established	Not Established
Ethyl alcohol 64-17-5	Not Established	Not Established	Not Established	Not Established

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	RQ
Phenolphthalein 77-09-8	-	Not Established	-
Methyl alcohol 67-56-1	5000 lb	Not Established	RQ 5000 lb final RQ RQ 2270 kg final RQ

Ethyl alcohol 64-17-5	-	Not Established	-

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 (Ethyl alcohol is only considered a Proposition 65 cancer and developmental hazard when it is ingested as an alcoholic beverage)

Chemical name	California Proposition 65
Phenolphthalein 77-09-8	Carcinogen
Methyl alcohol 67-56-1	Developmental
Ethyl alcohol 64-17-5	Carcinogen

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Phenolphthalein 77-09-8	X	Not Established	Not Established
Methyl alcohol 67-56-1	X	X	X
Ethyl alcohol 64-17-5	X	X	X

16. OTHER INFORMATION

NFPA **Health hazard** 1 **Flammability** 3 **Instability** 0 **Physical and Chemical Hazards** N/A

Health hazard 2 **Flammability** 3

Prepared by Regulatory Affairs Department
Issuing Date Jan-13-2015
Revision Date Apr-07-2015
Reason for revision Initial Release

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

Safety Data Sheet

Issuing Date Jun-01-2015 **Revision Number** 0

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

Product identifier

Product name **PHOSPHATE ACID REAGENT**

Other means of identification

Product Code(s) **3846**

UN-No 2796

Recommended use of the chemical and restrictions on use

Recommended Use Use as a laboratory reagent. 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

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Carcinogenicity	Category 1A

EMERGENCY OVERVIEW

DANGER POISON

Hazard statements
Causes skin irritation. Causes serious eye irritation. May cause cancer.

Appearance Clear, colorless **Physical state** liquid **Odor** Odorless

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. Wear eye/face protection.

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.
If skin irritation occurs: Get medical advice/attention.
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 locked up.

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant.

Unknown Acute Toxicity
1% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula Concentrations are percent by weight

Chemical name	CAS No	Weight-%
Sulfuric acid	7664-93-9	12

4. FIRST AID MEASURES

First Aid Measures

Eye contact IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek immediate medical attention/advice.

Skin contact Wash off immediately with soap and plenty of water for at least 15 minutes. Take off contaminated clothing and wash before reuse. Call a physician immediately.

Inhalation IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Give artificial respiration if victim is not breathing. Call a physician immediately.

Ingestion Do NOT induce vomiting. Call a physician immediately. Drink plenty of water. Never give anything by mouth to an unconscious person.

Self-protection of the first aider Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protection recommended in Section 8.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Dry chemical or CO_2. DO NOT USE WATER.

Specific hazards arising from the chemical
React vigorously and/or explosively with water.

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 Ensure adequate ventilation. Use personal protection recommended in Section 8. Avoid breathing vapors or mists. 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 Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Dispose of contents/containers in accordance with local regulations.

Methods for cleaning up Neutralize spill with alkaline material (sodium bicarbonate), being careful to prevent splattering, then containerize slurry and hold for later disposal. If local regulations permit, dilute slurry with water and rinse to drain with excess water. 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. 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. Keep away from incompatible materials such as cyanides or sulfides. Store away from strong bases or metals. Do not store near combustible materials. Keep out of the reach of children.

Incompatible Products Water. Strong bases. Metals. Combustible materials. Cyanides. Sulfides. Formaldehyde.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sulfuric acid 7664-93-9	TWA: 0.2 mg/m^3	TWA: 1 mg/m^3	IDLH: 15 mg/m^3 TWA: 1 mg/m^3

Appropriate engineering controls

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

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

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

Respiratory protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands 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, colorless **Odor** Odorless

Property	Values	Remarks • Method
pH	<1	No information available
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	No information available	
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 under normal conditions of use and storage. Reacts with water.
Hazardous Reactions	Contact with metals may evolve flammable hydrogen gas. May release flammable gasses when heated or in contact with water.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Excessive heat. Incompatible products. Moisture.
Incompatible materials	Water. Strong bases. Metals. Combustible materials. Cyanides. Sulfides. Formaldehyde.
Hazardous decomposition products	Hydrogen gas. Sulfur oxides (SOx).

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Sulfuric acid 7664-93-9	= 2140 mg/kg (Rat)	Not Established	= 510 mg/m³ (Rat) 2 h

Information on toxicological effects

Chemical name	ACGIH	IARC	NTP	OSHA
Sulfuric acid 7664-93-9	A2	Group 1	Known	X

ACGIH (American Conference of Governmental Industrial Hygienists)
A2 - Suspected Human Carcinogen
A3 - Animal 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

Chronic toxicity Chronic exposure to corrosive mists or vapors may cause erosion of the teeth. Chronic exposure to mists containing sulfuric acid is a cancer hazard.

ATEmix (oral) 18448

12. ECOLOGICAL INFORMATION

Ecotoxicity

Unknown Aquatic Toxicity 1% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical name	Toxicity to Algae	Toxicity to Fish	Daphnia Magna (Water Flea)
Sulfuric acid 7664-93-9	Not Established	500: 96 h Brachydanio rerio mg/L LC50 static	29: 24 h Daphnia magna mg/L EC50

Persistence and degradability

No information available.

Bioaccumulation/Accumulation

When released into the soil, this material may leach into ground water. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet or dry deposition.

Chemical name	Log Pow
Sulfuric acid 7664-93-9	Not Established

13. DISPOSAL CONSIDERATIONS

Disposal Methods Dispose according to federal, state, and local regulations. If permitted, neutralize reagent with sodium bicarbonate/sodium carbonate, add slurry to large volume of water to dilute, rinse to drain with excess water.

Contaminated packaging Do not reuse empty containers.

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Sulfuric acid 7664-93-9	Not Established	-	Not Established	Not Established

Chemical name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Sulfuric acid 7664-93-9	Not Established	Not Established	Not Established	Not Established

Chemical name	California Hazardous Waste Status
Sulfuric acid 7664-93-9	-

14. TRANSPORT INFORMATION

DOT

Proper shipping name SULFURIC ACID (with <51% ACID)
UN-No 2796
Hazard Class 8
Packing group II
Reportable Quantity (RQ) 1000

IATA

Proper shipping name	SULFURIC ACID (with <51% ACID)
UN-No	2796
Hazard Class	8
Packing group	II

IMDG/IMO

Proper shipping name	SULFURIC ACID (with <51% ACID)
UN-No	2796
Hazard Class	8
Packing group	II

15. REGULATORY INFORMATION

International Inventories

TSCA	Does not comply
DSL/NDSL	Complies
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 %
Sulfuric acid 7664-93-9	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	Yes

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
Sulfuric acid 7664-93-9	1000 lb	Not Established	Not Established	X

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	RQ
Sulfuric acid 7664-93-9	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ

US State Regulations

California Proposition 65

California Proposition 65 has classified "strong inorganic acid mists containing sulfuric acid" as a chemical known to the State of California to cause cancer. This classification applies only to "inorganic mists containing sulfuric acid" and not to sulfuric acid or sulfuric acid solutions

Chemical name	California Proposition 65
Sulfuric acid 7664-93-9	Carcinogen

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Sulfuric acid 7664-93-9	X	X	X

CPSC (Consumer Product Safety Commission) - Specially Regulated Substances

Chemical name	CPSC (Consumer Product Safety Commission) - Specially Regulated Substances
Sulfuric acid 7664-93-9	Add POISON to label, 16 CFR 1500.129 (>=10%, free or chemically unneutralized)

16. OTHER INFORMATION

NFPA **Health hazard** 3 **Flammability** 0 **Instability** 0 **Physical and Chemical Hazards** W

HMIS **Health hazard** 3 **Flammability** 0 **Stability** 2

Prepared by Regulatory Affairs Department
Issuing Date Jun-01-2015
Revision Date Jul-02-2015
Reason for revision New US GHS format

Disclaimer

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End of Material Safety Data Sheet

Safety Data Sheet

OSHA format

Issuing Date Jun-01-2015 **Revision Number** 0

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

Product identifier

Product name **Sodium Thiosulfate .025 N**

***

Other means of identification

Product Code(s) **4169**

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

OSHA Regulatory Status

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

EMERGENCY OVERVIEW

Appearance Colorless **Physical state** liquid **Odor** None

Precautionary Statements - Prevention

Keep out of the reach of children.

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 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.

3. COMPOSITION/INFORMATION ON INGREDIENTS

This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

4. FIRST AID MEASURES

First Aid Measures

General advice Do not get in eyes, on skin, or on clothing.

Eye contact Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.

Skin contact Wash off with warm water and soap. If skin irritation persists, call a physician.

Inhalation Not expected. Remove to fresh air.

Ingestion Drink plenty of water. Consult a physician if necessary.

Self-protection of the first aider Use personal protection recommended in Section 8. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

5. FIREFIGHTING MEASURES

Suitable extinguishing media
Dry chemical, CO_2, alcohol-resistant foam or water spray.

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 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 If local regulations permit, rinse to drain with excess water. 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. Prevent contact with skin, eyes, and clothing. Do not taste or swallow. 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. Store at room temperature. Keep away from direct sunlight. Store away from incompatible materials. Keep out of the reach of children.

Incompatible Products Acids.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

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).

Skin and body protection Wear protective gloves/clothing.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state liquid
Appearance Colorless **Odor** None

Property	Values	Remarks • Method
pH	10	
Melting point / freezing point	No information available	
Boiling point / boiling range	No information available	
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 information available	
Water solubility	No information available	
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 under recommended storage conditions.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Excessive heat. Direct sunlight. Incompatible Products.
Incompatible materials	Acids.
Hazardous decomposition products	

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Component identification

Information on toxicological effects

12. ECOLOGICAL INFORMATION

Ecotoxicity

Persistence and degradability
No information available.

Bioaccumulation/Accumulation
No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods	This material, as supplied, is not a hazardous waste according to state and federal regulations (40 CFR 261). Can be disposed as waste water, when in compliance with local regulations.
Contaminated packaging	Do not reuse empty containers.

14. TRANSPORT INFORMATION

DOT	Not regulated
IATA	Not regulated
IMDG/IMO	Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
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 does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

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

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

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)

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

CPSC (Consumer Product Safety Commission) - Specially Regulated Substances

16. OTHER INFORMATION

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

Health Hazard	1
Fire Hazard	0
Reactivity	0

Prepared by Regulatory Affairs Department
Issuing Date Jun-01-2015

Disclaimer

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End of Safety Data Sheet

Safety Data Sheet

OSHA format

Issuing Date Jun-01-2015 **Revision Number** 0

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

Product identifier

Product name **STARCH INDICATOR SOLUTION**

***

Other means of identification

Product Code(s) **4170**

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

OSHA Regulatory Status

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

EMERGENCY OVERVIEW

Appearance Colorless **Physical state** liquid **Odor** None

Precautionary Statements - Prevention

Do not handle until all safety precautions have been read and understood. Keep container tightly closed. Keep out of reach of children.

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 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.

3. COMPOSITION/INFORMATION ON INGREDIENTS

4. FIRST AID MEASURES

First Aid Measures

General advice 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. If irritation persists or develops, contact a physician.

Skin contact Wash off with warm water and soap. If skin irritation persists, call a physician.

Inhalation Not expected.

Ingestion Drink plenty of water. Do not induce vomiting without medical advice (pH 3). Consult a physician. Never give anything by mouth to an unconscious person.

Self-protection of the first aider Use personal protective equipment. See section 8 for more information. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

5. FIREFIGHTING MEASURES

Suitable extinguishing media
Dry chemical, CO_2, alcohol-resistant foam or water spray.

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 protective equipment. See section 8. Avoid contact with eyes, skin and clothing.

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment 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 Neutralize spill with alkaline material (sodium bicarbonate), being careful to prevent splattering, then containerize slurry and hold for later disposal. If local regulations permit, dilute slurry with water and rinse to drain with excess water. Keep in suitable and closed containers for disposal. 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. Prevent contact with skin, eyes, and clothing. Do not taste or swallow. 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. Store at room temperature. Keep away from direct sunlight. Store away from incompatible materials. Keep out of the reach of children.

Incompatible Products Strong oxidizing agents. Iron Salts.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

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).

Skin and body protection Wear protective gloves/clothing.

Respiratory protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state liquid
Appearance Colorless **Odor** None

Property	Values	Remarks • Method
pH	3	
Melting point / freezing point	No information available	
Boiling point / boiling range	ca. 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 information available	
Water solubility	No information available	
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 under normal conditions of use and storage.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Excessive heat. Incompatible products. Direct sunlight.
Incompatible materials	Strong oxidizing agents. Iron Salts.
Hazardous decomposition products	Carbon monoxide (CO).

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Component identification

Information on toxicological effects

Chronic toxicity Prolonged skin contact may cause skin irritation and/or dermatitis.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Unknown Aquatic Toxicity 99.87 % of the mixture consists of components(s) of unknown hazards to the aquatic environment

Persistence and degradability

No information available.

Bioaccumulation/Accumulation

No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods	Dispose according to federal, state, and local regulations. If permitted, neutralize reagent with sodium bicarbonate/sodium carbonate, add slurry to large volume of water to dilute, rinse to drain with excess water.
Contaminated packaging	Do not reuse empty containers.

14. TRANSPORT INFORMATION

DOT Not regulated

IATA Not regulated

IMDG/IMO Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
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 does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

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 does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

CPSC (Consumer Product Safety Commission) - Specially Regulated Substances

16. OTHER INFORMATION

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

Prepared by Regulatory Affairs Department
Issuing Date Jun-01-2015
Reason for revision MSDS was reviewed per Canada request - Canada requires MSDS to be dated within 3 years of the request

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 Safety Data Sheet

Safety Data Sheet

OSHA format

Issuing Date May-03-2012 **Revision Date** Feb-09-2015 **Revision Number** 0

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

Product identifier

Product name **Wide Range Indicator**

***

Other means of identification

Product Code(s) **2218**

UN-No 1170

Recommended use of the chemical and restrictions on use

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

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
Germ cell mutagenicity	Category 1B
Carcinogenicity	Category 1A
Reproductive toxicity	Category 1A
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 1
Physical hazards Flammable Liquids.	Category 3

EMERGENCY OVERVIEW

DANGER

Hazard statements

Causes serious eye irritation. May cause genetic defects. May cause cancer. May damage fertility or the unborn child. May cause respiratory irritation. May cause drowsiness or dizziness. Causes damage to organs through prolonged or repeated exposure. FLAMMABLE LIQUID AND VAPOR.

Appearance dark green **Physical state** liquid **Odor** Alcohol

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. Wear eye/face protection. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area.

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 locked up. Store in a well-ventilated place. Keep container tightly closed.

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant.

Other Hazards
May be harmful if swallowed Toxic to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	Weight-%
Phenolphthalein	77-09-8	<0.05
Potassium hydroxide	1310-58-3	<0.1
2,4-Dinitrophenol***	51-28-5	0.05
Methyl alcohol***	67-56-1	2
Ethyl alcohol***	64-17-5	52

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

4. FIRST AID MEASURES

First Aid Measures

General advice — Do not get in eyes, on skin, or on clothing. If symptoms persist, call a physician.***

Eye contact — Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact — Wash off immediately with plenty of water for at least 15 minutes. Consult a physician if necessary.***

Inhalation — IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician immediately.***

Ingestion — Drink 1 or 2 glasses of water. Do not induce vomiting without medical advice. Call a physician immediately.

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. No artificial respiration, mouth-to-mouth or mouth to nose. Use suitable instruments/apparatus.***

5. FIREFIGHTING MEASURES

Suitable extinguishing media

Water spray, dry chemical, carbon dioxide (CO_2), or foam.

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 See section 8. Ensure adequate ventilation. Remove all sources of ignition.

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Dispose according to federal, state, and local regulations.

Methods for cleaning up 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. Prevent contact with skin, eyes, and clothing. Do not taste or swallow. 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. Keep away from heat and sources of ignition. Do not store near combustible materials. Keep out of the reach of children.

Incompatible Products NITRIC ACID. Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Phenolphthalein 77-09-8	-	-	Not Established
Potassium hydroxide 1310-58-3	Ceiling: 2 mg/m³***	(vacated) Ceiling: 2 mg/m³***	Ceiling: 2 mg/m³***
2,4-Dinitrophenol*** 51-28-5	-	-	Not Established
Methyl alcohol*** 67-56-1	STEL: 250 ppm TWA: 200 ppm S****	TWA: 200 ppm TWA: 260 mg/m³ (vacated) TWA: 200 ppm (vacated) TWA: 260 mg/m³ (vacated) STEL: 250 ppm (vacated) STEL: 325 mg/m³ (vacated) S****	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m³ STEL: 250 ppm STEL: 325 mg/m³***
Ethyl alcohol*** 64-17-5	STEL: 1000 ppm***	TWA: 1000 ppm TWA: 1900 mg/m³ (vacated) TWA: 1000 ppm (vacated) TWA: 1900 mg/m³***	IDLH: 3300 ppm TWA: 1000 ppm TWA: 1900 mg/m³***

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).

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

Respiratory protection Use only with adequate ventilation.

Hygiene Measures Do not eat, drink or smoke when using this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state liquid
Appearance dark green **Odor** Alcohol

Property	Values	Remarks • Method
pH		
Melting point / freezing point	No information available	
Boiling point / boiling range	No information available	
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 information available	
Water solubility	No information available	
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 under normal conditions of use and storage.
Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid Heat, flames and sparks.
Incompatible materials NITRIC ACID. Strong oxidizing agents.
Hazardous decomposition products Carbon oxides (COx).

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Component identification

Chemical name	ATEmix (oral)	ATEmix (dermal)	Inhalation LC50
Phenolphthalein 77-09-8	Not Established	Not Established	Not Established
Potassium hydroxide 1310-58-3	= 284 mg/kg (Rat)***	Not Established	Not Established
2,4-Dinitrophenol*** 51-28-5	= 30 mg/kg (Rat)***	= 25 mg/kg (Rat)***	Not Established
Methyl alcohol*** 67-56-1	= 6200 mg/kg (Rat)***	= 15800 mg/kg (Rabbit)***	= 64000 ppm (Rat) 4 h = 22500 ppm (Rat) 8 h***
Ethyl alcohol*** 64-17-5	= 7060 mg/kg (Rat)***	Not Established	= 124.7 mg/L (Rat) 4 h***

Information on toxicological effects

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Phenolphthalein 77-09-8	Not Established	Group 2B***	Reasonably Anticipated***	X***
Potassium hydroxide 1310-58-3	Not Established	Not Established	Not Established	Not Established
2,4-Dinitrophenol*** 51-28-5	Not Established	Not Established	Not Established	Not Established
Methyl alcohol*** 67-56-1	Not Established	Not Established	Not Established	Not Established
Ethyl alcohol*** 64-17-5	A3***	Group 1***	Known	X***

IARC (International Agency for Research on Cancer)
Group 2B - Possibly Carcinogenic to Humans
NTP (National Toxicology Program)
Known - Known Carcinogen
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present

Chronic toxicity Ethanol has been shown to be a reproductive toxin only when consumed as an alcoholic beverage. Prolonged skin contact may cause skin irritation and/or dermatitis.

ATEmix (oral) 5,000.00 mg/kg
ATEmix (dermal) 15,000.00 mg/kg
ATEmix (inhalation-dust/mist) 25.05 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

Unknown Aquatic Toxicity 0.0683 % of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical name	Toxicity to Algae	Toxicity to Fish	Daphnia Magna (Water Flea)
Phenolphthalein 77-09-8	Not Established	Not Established	Not Established
Potassium hydroxide 1310-58-3	Not Established	80: 96 h Gambusia affinis mg/L LC50 static***	Not Established
2,4-Dinitrophenol*** 51-28-5	Not Established	13590 - 17460: 96 h Lepomis macrochirus µg/L LC50 static 210 - 330: 96 h Cyprinus carpio mg/L LC50 5.86 - 7.39: 96 h Pimephales promelas mg/L LC50 flow-through 910 - 1480: 96 h Oncorhynchus mykiss µg/L LC50 flow-through 390: 96 h Oncorhynchus mykiss µg/L LC50 static***	Not Established
Methyl alcohol*** 67-56-1	Not Established	13500 - 17600: 96 h Lepomis macrochirus mg/L LC50 flow-through 18 - 20: 96 h Oncorhynchus mykiss mL/L LC50	Not Established

		static 19500 - 20700: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 28200: 96 h Pimephales promelas mg/L LC50 flow-through 100: 96 h Pimephales promelas mg/L LC50 static***	
Ethyl alcohol*** 64-17-5	Not Established	12.0 - 16.0: 96 h Oncorhynchus mykiss mL/L LC50 static 13400 - 15100: 96 h Pimephales promelas mg/L LC50 flow-through 100: 96 h Pimephales promelas mg/L LC50 static***	9268 - 14221: 48 h Daphnia magna mg/L LC50 10800: 24 h Daphnia magna mg/L EC50 2: 48 h Daphnia magna mg/L EC50 Static***

Persistence and degradability

Ethanol: When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released into water, this material may evaporate to a moderate extent. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to be readily removed from the atmosphere by dry and wet deposition. When released into the air, this material is expected to have a half-life between 1 and 10 days.

Bioaccumulation/Accumulation

No information available.

Chemical name	Log Pow
Phenolphthalein 77-09-8	Not Established
Potassium hydroxide 1310-58-3	0.65 0.83***
2,4-Dinitrophenol*** 51-28-5	1.54***
Methyl alcohol*** 67-56-1	-0.77***
Ethyl alcohol*** 64-17-5	-0.32***

13. DISPOSAL CONSIDERATIONS

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

Contaminated packaging Do not reuse empty containers.

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Phenolphthalein 77-09-8	Not Established	-	Not Established	Not Established
Potassium hydroxide 1310-58-3	Not Established	-	Not Established	Not Established
2,4-Dinitrophenol*** 51-28-5	P048***	Included in waste streams: F039, K001***	Not Established	Not Established
Methyl alcohol*** 67-56-1	Not Established	Included in waste stream: F039***	Not Established	U154***
Ethyl alcohol*** 64-17-5	Not Established	-	Not Established	Not Established

Chemical name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Phenolphthalein 77-09-8	Not Established	Not Established	Not Established	Not Established
Potassium hydroxide 1310-58-3	Not Established	Not Established	Not Established	Not Established
2,4-Dinitrophenol*** 51-28-5	Not Established	P048***	Not Established	Not Established
Methyl alcohol*** 67-56-1	Not Established	Not Established	Not Established	Not Established
Ethyl alcohol***	Not Established	Not Established	Not Established	Not Established

64-17-5				

.

Chemical name	California Hazardous Waste Status
Phenolphthalein 77-09-8	-
Potassium hydroxide 1310-58-3	Toxic Corrosive***
2,4-Dinitrophenol*** 51-28-5	-
Methyl alcohol*** 67-56-1	Toxic Ignitable***
Ethyl alcohol*** 64-17-5	Toxic Ignitable***

14. TRANSPORT INFORMATION

DOT

Proper shipping name	ETHANOL SOLUTION (Ethyl Alcohol Solution)
UN-No	1170
Hazard Class	3
Packing group	II

IATA

Proper shipping name	ETHANOL SOLUTION (Ethyl Alcohol Solution)
UN-No	1170
Hazard Class	3
Packing group	II

IMDG/IMO

Proper shipping name	ETHANOL SOLUTION (Ethyl Alcohol Solution)
UN-No	1170
Hazard Class	3
Packing group	II

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
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 %
Phenolphthalein 77-09-8	0.1***
Potassium hydroxide 1310-58-3	Not Established
2,4-Dinitrophenol*** 51-28-5	1.0***
Methyl alcohol*** 67-56-1	1.0***
Ethyl alcohol*** 64-17-5	Not Established

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	Yes
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
Phenolphthalein 77-09-8	Not Established	Not Established	Not Established	Not Established
Potassium hydroxide 1310-58-3	1000 lb***	Not Established	Not Established	X***
2,4-Dinitrophenol*** 51-28-5	10 lb***	X***	X***	X***
Methyl alcohol*** 67-56-1	Not Established	Not Established	Not Established	Not Established
Ethyl alcohol*** 64-17-5	Not Established	Not Established	Not Established	Not Established

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
Phenolphthalein 77-09-8	-	Not Established	-
Potassium hydroxide 1310-58-3	1000 lb***	Not Established	RQ 1000 lb final RQ RQ 454 kg final RQ***
2,4-Dinitrophenol*** 51-28-5	10 lb***	Not Established	RQ 10 lb final RQ RQ 4.54 kg final RQ***
Methyl alcohol*** 67-56-1	5000 lb***	Not Established	RQ 5000 lb final RQ RQ 2270 kg final RQ***
Ethyl alcohol*** 64-17-5	-	Not Established	-

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

(Ethyl alcohol is only considered a Proposition 65 cancer and developmental hazard when it is ingested as an alcoholic beverage)***

Chemical name	California Proposition 65
Phenolphthalein	Carcinogen***

77-09-8	
Potassium hydroxide 1310-58-3	Not Established
2,4-Dinitrophenol*** 51-28-5	Not Established
Methyl alcohol*** 67-56-1	Developmental
Ethyl alcohol*** 64-17-5	Carcinogen

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Phenolphthalein 77-09-8	X***	Not Established	Not Established
Potassium hydroxide 1310-58-3	X***	X***	X***
2,4-Dinitrophenol*** 51-28-5	X***	X***	X***
Methyl alcohol*** 67-56-1	X***	X***	X***
Ethyl alcohol*** 64-17-5	X***	X***	X***

CPSC (Consumer Product Safety Commission) - Specially Regulated Substances

Chemical name	CPSC (Consumer Product Safety Commission) - Specially Regulated Substances
Potassium hydroxide 1310-58-3	Banned, 16 CFR 1500.17 Add POISON to label, 16 CFR 1500.129***
Methyl alcohol*** 67-56-1	Special labeling, 16 CFR 1500.14***

16. OTHER INFORMATION

NFPA **Health hazard** 2 **Flammability** 3 **Instability** 0 **Physical and Chemical Hazards** N/A

Health hazard 2 **Flammability** 3

Prepared by Regulatory Affairs Department
Issuing Date May-03-2012
Revision Date Feb-09-2015
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 Safety Data Sheet