



Issuing Date 3/25/2013

Revision Number 0

1. PRODUCT AND COMPANY IDENTIFICATION

Product name DEHA REAGENT 1

Product Code(s) 4791

Recommended Use Test kit reagent. Laboratory chemicals. Industrial (not for food or food contact use).

Company LaMotte Company, Inc.
802 Washington Avenue
P.O. Box 329
Chestertown, MD 21620
USA

Emergency telephone number 24 Hour Emergency Number (CHEM-TEL):USA, Canada, Puerto Rico 1-800-255-3924
Outside North American Continent (Call collect) 813-248-0585

2. HAZARDS IDENTIFICATION

WARNING

EMERGENCY OVERVIEW
Irritating to eyes, respiratory system, and skin
May cause burns to eyes and skin
May be harmful if swallowed

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

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

Potential health effects
Principle Routes of Exposure Skin Contact, Ingestion.

Acute toxicity

- Eyes** Irritating to eyes. May cause burns. Effects should be less severe than those seen from higher concentrations.
- Skin** Irritating to skin. May cause burns. Effects are expected to be less severe than for exposures to higher concentrations which symptoms include severe burns, pain, redness.
- Inhalation** May cause irritation of respiratory tract.
- Ingestion** Causes irritation. Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea.

Chronic effects
Aggravated Medical Conditions Hypersensitivity may occur in those with preexisting skin disorders. Preexisting eye disorders.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS-No	Weight %
Kathon CG/ICP Preservative	KATHON	<0.1
Nitric acid	7697-37-2	1.4
Glycine	56-40-6	<4
Water	7732-18-5	to 100%

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

5. FIRE-FIGHTING MEASURES

Flammable properties	Not a fire hazard.
Flash point	Not Applicable
Suitable extinguishing media	Water spray, dry chemical, carbon dioxide (CO ₂), or foam.

NFPA	Health hazard 1	flammability 0	Stability 0	Physical and Chemical Hazards -
HMIS	Health hazard 0	flammability 0	Stability 0	

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Refer to Section 8. Use personal protective equipment. Avoid contact with skin, eyes, and inhalation of vapors.
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

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.
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Storage

Keep containers tightly closed in a dry, cool, and well-ventilated place. Store away from strong bases or metals. Keep away from direct sunlight. Keep out of the reach of children.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Kathon CG/ICP Preservative KATHON	None known	None known	None known
Nitric acid 7697-37-2	4 ppm STEL TWA: 2 ppm	TWA: 2 ppm TWA: 5 mg/m ³	IDLH: 25 ppm TWA: 2 ppm TWA: 5 mg/m ³ STEL: 4 ppm STEL: 10 mg/m ³
Glycine 56-40-6	None known	None known	None known
Water 7732-18-5	None known	None known	None known

Engineering Measures

Showers
Eyewash stations
Ventilation systems.

Personal protective equipment**Eye/face Protection**

Safety glasses with side-shields. If splashes are likely to occur, wear: Face-shield.

Skin and body protection

Wear protective gloves/clothing. Nitrile rubber. Neoprene gloves.

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

Appearance	Clear, colorless	Odor	odorless
Physical state	liquid	pH	2-3
Flash point	Not Applicable	Boiling Point/Range	ca. 100°C/212°F

Vapor density

Essentially the same as water

10. STABILITY AND REACTIVITY

Stability

Stable under normal conditions of use and storage.

Incompatible Products

Strong bases. Metallic powders. Sulfides.

Conditions to avoid

Excessive heat. Incompatible products.

Hazardous decomposition products

May produce the following when heated to decomposition: Nitrogen oxides (NO_x). Hydrogen nitrate.

Hazardous polymerization

Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Kathon CG/ICP Preservative	None known	None known	None known
Nitric acid	None known	None known	67 ppm (Rat) 4 h 130 mg/m ³ (Rat) 4 h
Glycine	7930 mg/kg (Rat)	None known	None known
Water	90 mL/kg (Rat)	None known	None known

Chronic toxicity

Chemical name	ACGIH	IARC	NTP	OSHA
Kathon CG/ICP Preservative	None known	None known	None known	None known
Nitric acid	None known	Group 2A	None known	X
Glycine	None known	None known	None known	None known
Water	None known	None known	None known	None known

Chemical name	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine disrupting potential
Kathon CG/ICP Preservative	None known	None known	None known
Nitric acid	None known	None known	None known
Glycine	None known	None known	None known
Water	None known	None known	None known

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Toxicity to Algae	Toxicity to Fish	Microtox	Daphnia Magna (Water Flea)
Kathon CG/ICP Preservative	None known	None known	None known	None known
Nitric acid	None known	None known	None known	None known
Glycine	None known	None known	None known	None known
Water	None known	None known	None known	None known

Chemical name	Log Pow
Kathon CG/ICP Preservative	None known
Nitric acid	= -2.3 25 °C
Glycine	None known
Water	None known

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method

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.

Chemical name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Kathon CG/ICP Preservative - KATHON	None known	None known	None known	None known
Nitric acid - 7697-37-2	None known	None known	None known	None known
Glycine - 56-40-6	None known	None known	None known	None known
Water - 7732-18-5	None known	None known	None known	None known

14. TRANSPORT INFORMATION

DOT Not regulated

IATA Not regulated

IMDG/IMO Not regulated

15. REGULATORY INFORMATION

International Inventories

Component	TSCA	DSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Kathon CG/ICP Preservative KATHON (<0.1)	TSCA	DSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Nitric acid 7697-37-2 (1.4)	Present	X	X	Present	X	KE-25911	X	X
Glycine 56-40-6 (<4)	Present	X	X	Present	X	KE-01153	X	X
Water 7732-18-5 (to 100%)	Present	X	X	ENCS	X	KE-35400	X	X

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

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

Chemical name	CAS-No	Weight %	SARA 313 - Threshold Values %
Kathon CG/ICP Preservative	KATHON	<0.1	None known
Nitric acid	7697-37-2	1.4	1.0
Glycine	56-40-6	<4	None known
Water	7732-18-5	to 100%	None known

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

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Kathon CG/ICP Preservative KATHON (<0.1)	None known	None known	None known	None known
Nitric acid 7697-37-2 (1.4)	1000 lb	None known	None known	X
Glycine 56-40-6 (<4)	None known	None known	None known	None known
Water 7732-18-5 (to 100%)	None known	None known	None known	None known

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

This product contains the following HAPs:.

Chemical name	CAS-No	Weight %	HAPS data	VOC Chemicals	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Kathon CG/ICP Preservative	KATHON	<0.1	None known	None known	None known	None known
Nitric acid	7697-37-2	1.4	None known	None known	None known	None known
Glycine	56-40-6	<4	None known	Group II	None known	None known
Water	7732-18-5	to 100%	None known	None known	None known	None known

CERCLA

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ
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Kathon CG/ICP Preservative	None known	None known
Nitric acid	1000 lb	1000 lb
Glycine	None known	None known
Water	None known	None known

U.S. State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals

Chemical name	CAS-No	California Prop. 65
Kathon CG/ICP Preservative	KATHON	None known
Nitric acid	7697-37-2	None known
Glycine	56-40-6	None known
Water	7732-18-5	None known

Chemical name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Kathon CG/ICP Preservative	None known	None known	None known	None known	None known
Nitric acid	X	X	X	X	X
Glycine	None known	None known	None known	None known	None known
Water	None known	None known	None known	None known	None known

International Regulations**Mexico - Grade**

Chemical name	Carcinogen Status	Exposure Limits
Kathon CG/ICP Preservative	None known	None known
Nitric acid	None known	Mexico: TWA 2 ppm Mexico: TWA 5 mg/m ³ Mexico: STEL 4 ppm Mexico: STEL 10 mg/m ³
Glycine	None known	None known
Water	None known	None known

CANADA

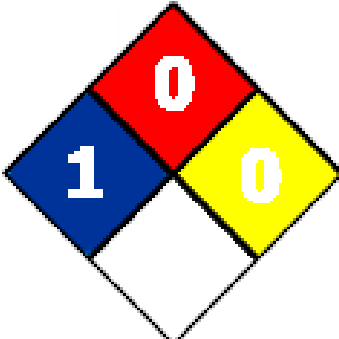
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

Component	WHMIS Hazard Class
Kathon CG/ICP Preservative KATHON (<0.1)	Not Determined
Nitric acid 7697-37-2 (1.4)	1 % C,E E C,D1B,E
Glycine 56-40-6 (<4)	Uncontrolled product according to WHMIS classification criteria
Water 7732-18-5 (to 100%)	Uncontrolled product according to WHMIS classification criteria



Chemical name	NPRI
Nitric acid	X

16. OTHER INFORMATION

NFPA	HMIS	PPE	Transport Symbol						
	<table border="1"> <tr> <td data-bbox="508 195 727 241">Health Hazard</td> <td data-bbox="735 195 808 241">1</td> </tr> <tr> <td data-bbox="508 241 727 287">Fire Hazard</td> <td data-bbox="735 241 808 287">0</td> </tr> <tr> <td data-bbox="508 287 727 333">Reactivity</td> <td data-bbox="735 287 808 333">1</td> </tr> </table>	Health Hazard	1	Fire Hazard	0	Reactivity	1		
Health Hazard	1								
Fire Hazard	0								
Reactivity	1								

Prepared by
 Issuing Date
 Revision date
 Revision note

Regulatory Affairs Department
 3/25/2013
 -
 MSDS was reviewed per Canada request - Canada requires MSDS to be dated within 3 years of the request. Update to Format.

Disclaimer

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

End of MSDS

Issuing Date 3/25/2013

Revision Number 0

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name DEHA REAGENT 2
Product Code(s) 4792
Recommended Use Test kit reagent. Industrial (not for food or food contact use). Laboratory chemicals.
Company LaMotte Company, Inc.
 802 Washington Avenue
 P.O. Box 329
 Chestertown, MD 21620
 USA
Emergency Telephone Number 24 Hour Emergency Number (CHEM-TEL):
 USA, Canada, Puerto Rico 1-800-255-3924
 Outside North American Continent (Call collect) 813-248-0585

2. HAZARDS IDENTIFICATION
WARNING!
Emergency Overview

May be harmful if swallowed
 May be irritating to eyes, respiratory system, and skin
 May cause irritation of the gastrointestinal tract

Appearance Clear, Pale yellow

Physical State Liquid

Odor Odorless

OSHA Regulatory Status Safety information is given for exposure to the reagent as sold and considers exposure to the chemical if user has direct eye and skin contact.

Potential Health Effects

Principle Routes of Exposure Skin contact, Ingestion, Inhalation.

Acute Toxicity

Eyes May cause irritation. May cause redness, itching, and pain.
Skin May cause irritation.
Inhalation May cause irritation of respiratory tract.
Ingestion May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea.

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %
Sodium hydroxide	1310-73-2	0.2
Benzenesulfonic acid, 4,4`-[3-(2-pyridinyl)-1,2,4-triazine-5,6-diy]bis-, monosodium salt	69898-45-9	0.7
Water	7732-18-5	to 100%

4. 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 while removing all contaminated clothing and shoes. Consult a physician.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. Consult a physician.
Ingestion	DO NOT induce vomiting unless directed to do so by a physician or poison control center. Drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician immediately.
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.

5. FIRE-FIGHTING MEASURES

Flammable Properties	Not a fire hazard.
Flash Point	Not applicable
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.

<u>NFPA</u>	Health Hazard 1	Flammability 0	Stability 0	Physical and Chemical Hazards -
<u>HMIS</u>	Health Hazard 1	Flammability 0	Stability 0	

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Refer to Section 8. Use personal protective equipment. Avoid contact with skin, eyes, and inhalation of vapors.
Methods for Cleaning Up	Neutralize spills with acid such as acetic, hydrochloric or sulfuric, absorb with vermiculite or other inert substance, and package in a suitable container for disposal. Keep in suitable and closed containers for disposal. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

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.
Storage	Keep containers tightly closed in a dry, cool, and well-ventilated place. Store away from strong acids and oxidizers. Keep out of the reach of children.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sodium hydroxide 1310-73-2	None Known	TWA: 2 mg/m ³	IDLH: 10 mg/m ³ Ceiling: 2 mg/m ³
Benzenesulfonic acid, 4,4'-[3-(2-pyridinyl)-1,2,4-triazine-5, 6-diyl]bis-, monosodium salt 69898-45-9	None Known	None Known	None Known
Water 7732-18-5	None Known	None Known	None Known

Engineering Measures Showers
Eyewash stations
Ventilation systems.

Personal Protective Equipment

Eye/Face Protection

Safety glasses with side-shields.

Skin and Body Protection

Wear protective gloves/clothing. Impervious gloves. Nitrile rubber.

Respiratory Protection

Not expected to require personal respirator with normal usage. 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

Appearance	Clear Pale yellow	Odor	Odorless
Physical State	Liquid	pH	11 - 12
Flash Point	Not applicable	Boiling Point/Range	ca. 100°C/212°F Similar to water

Vapor Pressure	No information available	Vapor Density	No information available
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10. STABILITY AND REACTIVITY

Stability Stable under normal conditions of use and storage.

Incompatible Products Strong oxidizing agents. Strong acids.

Conditions to Avoid Incompatible products. Excessive heat.

Hazardous Decomposition Products Carbon oxides (COx).

Hazardous Polymerization Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium hydroxide	None Known	1350 mg/kg (Rabbit)	None Known
Benzenesulfonic acid, 4,4'-[3-(2-pyridinyl)-1,2,4-triazine-5, 6-diyl]bis-, monosodium salt	None Known	None Known	None Known
Water	90 mL/kg (Rat)	None Known	None Known

Chronic Toxicity

Chronic Toxicity

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

Chemical Name	ACGIH	IARC	NTP	OSHA
Sodium hydroxide	None Known	None Known	None Known	None Known
Benzenesulfonic acid, 4,4'-[3-(2-pyridinyl)-1,2,4-triazine-5,6-diyl]bis-, monosodium salt	None Known	None Known	None Known	None Known
Water	None Known	None Known	None Known	None Known

Endocrine Disruptor Information

Chemical Name	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Sodium hydroxide	None Known	None Known	None Known
Benzenesulfonic acid, 4,4'-[3-(2-pyridinyl)-1,2,4-triazine-5,6-diyl]bis-, monosodium salt	Group III Chemical	None Known	None Known
Water	None Known	None Known	None Known

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Toxicity to Algae	Toxicity to Fish	Microtox	Daphnia Magna (Water Flea)
Sodium hydroxide	None Known	LC50= 45.4 mg/L Oncorhynchus mykiss 96 h	None Known	None Known
Benzenesulfonic acid, 4,4'-[3-(2-pyridinyl)-1,2,4-triazine-5,6-diyl]bis-, monosodium salt	None Known	None Known	None Known	None Known
Water	None Known	None Known	None Known	None Known

Persistence and Degradability

No information available.

Chemical Name	Log Pow
Sodium hydroxide	None Known
Benzenesulfonic acid, 4,4'-[3-(2-pyridinyl)-1,2,4-triazine-5,6-diyl]bis-, monosodium salt	None Known
Water	None Known

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method

Dispose of in accordance with local regulations.

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Sodium hydroxide - 1310-73-2	None Known	None Known	None Known	None Known
Benzenesulfonic acid, 4,4'-[3-(2-pyridinyl)-1,2,4-triazine-5,6-diyl]bis-, monosodium salt - 69898-45-9	None Known	None Known	None Known	None Known
Water - 7732-18-5	None Known	None Known	None Known	None Known

14. TRANSPORT INFORMATION

DOT

Not regulated

IATA Not regulated

IMDG/IMO Not regulated

15. REGULATORY INFORMATION

International Inventories

Component	TSCA	DSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Sodium hydroxide 1310-73-2 (0.2)	Present	X	X	1-410; 2-1972	X	KE-31487	X	X
Benzenesulfonic acid, 4,4'-[3-(2-pyridinyl)-1,2,4-triazine-5,6-diyl]bis-, monosodium salt 69898-45-9 (0.7)	Present	X	X	ENCS	X	KECL	PICCS	AICS
Water 7732-18-5 (to 100%)	Present	X	X	ENCS	X	KE-35400	X	X

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product 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	CAS-No	Weight %	SARA 313 - Threshold Values %
Sodium hydroxide	1310-73-2	0.2	None Known
Benzenesulfonic acid, 4,4'-[3-(2-pyridinyl)-1,2,4-triazine-5,6-diyl]bis-, monosodium salt	69898-45-9	0.7	None Known
Water	7732-18-5	to 100%	None Known

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

Clean Water Act

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sodium hydroxide 1310-73-2 (0.2)	None Known	None Known	None Known	None Known
Benzenesulfonic acid, 4,4'-[3-(2-pyridinyl)-1,2,4-triazine-5, 6-diyl]bis-, monosodium salt 69898-45-9 (0.7)	None Known	None Known	None Known	None Known
Water 7732-18-5 (to 100%)	None Known	None Known	None Known	None Known

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

This product does not contain any substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990.

Chemical Name	CAS-No	Weight %	HAPS data	VOC Chemicals	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Sodium hydroxide	1310-73-2	0.2	None Known	None Known	None Known	None Known

Benzenesulfonic acid, 4,4'-[3-(2-pyridinyl)-1,2,4-triazine-5,6-diyl]bis-, monosodium salt	69898-45-9	0.7	None Known	None Known	None Known	None Known
Water	7732-18-5	to 100%	None Known	None Known	None Known	None Known

CERCLA

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Sodium hydroxide	1000 lb	None Known
Benzenesulfonic acid, 4,4'-[3-(2-pyridinyl)-1,2,4-triazine-5,6-diyl]bis-, monosodium salt	None Known	None Known
Water	None Known	None Known

U.S. State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals

Chemical Name	CAS-No	California Prop. 65
Sodium hydroxide	1310-73-2	None Known
Benzenesulfonic acid, 4,4'-[3-(2-pyridinyl)-1,2,4-triazine-5,6-diyl]bis-, monosodium salt	69898-45-9	None Known
Water	7732-18-5	None Known

U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Sodium hydroxide	X	X	X	None Known	X
Benzenesulfonic acid, 4,4'-[3-(2-pyridinyl)-1,2,4-triazine-5,6-diyl]bis-, monosodium salt	None Known	None Known	None Known	None Known	None Known
Water	None Known	None Known	None Known	None Known	None Known

International Regulations**Mexico - Grade**

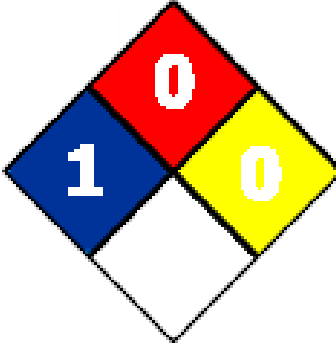

Chemical Name	Carcinogen Status	Exposure Limits
Sodium hydroxide	None Known	None Known
Benzenesulfonic acid, 4,4'-[3-(2-pyridinyl)-1,2,4-triazine-5,6-diyl]bis-, monosodium salt	None Known	None Known
Water	None Known	None Known

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

Component	WHMIS Hazard Class
Sodium hydroxide 1310-73-2 (0.2)	1 % E
Benzenesulfonic acid, 4,4'-[3-(2-pyridinyl)-1,2,4-triazine-5,6-diyl]bis-, monosodium salt 69898-45-9 (0.7)	Not determined
Water 7732-18-5 (to 100%)	Uncontrolled product according to WHMIS classification criteria

16. OTHER INFORMATION

NFPA	HMIS	PPE	Transport Symbol						
	<table border="1"> <tr> <td data-bbox="511 231 721 266">Health Hazard</td> <td data-bbox="725 231 802 266">1</td> </tr> <tr> <td data-bbox="511 273 721 308">Fire Hazard</td> <td data-bbox="725 273 802 308">0</td> </tr> <tr> <td data-bbox="511 315 721 350">Reactivity</td> <td data-bbox="725 315 802 350">0</td> </tr> </table>	Health Hazard	1	Fire Hazard	0	Reactivity	0		
Health Hazard	1								
Fire Hazard	0								
Reactivity	0								

Prepared By Regulatory Affairs Department
Issuing Date 3/25/2013
Revision Date -
Revision Note Update to Format.
Disclaimer

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

End of MSDS

Issuing Date 09-3-2010

Revision date 3/26/2013

Revision Number 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	DEHA REAGENT 3
Product Code(s)	4793
Recommended Use	Test kit reagent. Laboratory chemicals. Industrial (not for food or food contact use).
Company	LaMotte Company, Inc. 802 Washington Avenue P.O. Box 329 Chestertown, MD 21620 USA
Emergency telephone number	24 Hour Emergency Number (CHEM-TEL):USA, Canada, Puerto Rico 1-800-255-3924 Outside North American Continent (Call collect) 813-248-0585

2. HAZARDS IDENTIFICATION**WARNING****EMERGENCY OVERVIEW**

Liquid and mist can cause burns to all body tissue
Harmful if swallowed, inhaled, or absorbed through skin
Vapor is irritating to eyes and respiratory tract

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

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

Potential health effects

Principle Routes of Exposure Ingestion, Skin and eye contact.

Acute toxicity**Eyes**

May cause burns. May cause irreversible damage to eyes. Vapors are irritating and may cause damage to eyes.

Skin

Contact causes severe skin irritation and possible burns. Harmful if absorbed through skin.

Inhalation

Harmful by inhalation. Depending on exposure, the effects from inhalation of corrosive mists can vary from mild irritation to serious damage to respiratory tract. Inhalation of corrosive mist may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate.

Ingestion

Harmful if swallowed. Can burn mouth, throat, stomach, and GI tract. Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea. May cause additional affects as listed under "Inhalation".

Chronic effects

Aggravated Medical Conditions Hypersensitivity may occur in those with preexisting skin disorders. Respiratory disorders. Preexisting eye disorders.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS-No	Weight %
Ferric nitrate.9H ₂ O	7782-61-8	1
Nitric acid	7697-37-2	2.8
Water	7732-18-5	to 100%

4. 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	Immediately flush eyes with gentle stream of water for at least 15 minutes, occasionally lifting upper and lower eyelids. Call a physician immediately.
Skin contact	Wash off immediately with plenty of water for at least 15 minutes. Wash skin with soap and water. Remove and wash contaminated clothing before re-use. Seek immediate medical attention/advice.
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	Do NOT induce vomiting. Drink plenty of water. Clean mouth with water. Call a physician immediately. Never give anything by mouth to an unconscious person.
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.

5. FIRE-FIGHTING MEASURES

Flammable properties	Not combustible, but a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.			
Flash point	Not Applicable			
Suitable extinguishing media	Water spray, dry chemical, carbon dioxide (CO ₂), or foam.			
NFPA	Health hazard 2	flammability 0	Stability 0	Physical and Chemical Hazards -
HMIS	Health hazard 2	flammability 0	Stability 1	

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Refer to Section 8. Use personal protective equipment. Avoid contact with skin, eyes, and inhalation of vapors.
Methods for cleaning up	Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Keep in suitable and closed containers for disposal. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

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.
Storage	Keep containers tightly closed in a dry, cool, and well-ventilated place. Store away from strong bases or metals. Keep away from direct sunlight. Keep away from heat. Keep out of the reach of children.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Ferric nitrate.9H ₂ O 7782-61-8	TWA: 1 mg/m ³	None known	TWA: 1 mg/m ³
Nitric acid 7697-37-2	4 ppm STEL TWA: 2 ppm	TWA: 2 ppm TWA: 5 mg/m ³	IDLH: 25 ppm TWA: 2 ppm TWA: 5 mg/m ³ STEL: 4 ppm STEL: 10 mg/m ³
Water 7732-18-5	None known	None known	None known

Engineering Measures
Showers
Eyewash stations
Ventilation systems. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye/face Protection

Safety glasses with side-shields. If splashes are likely to occur, wear: Face-shield.

Skin and body protection

Wear protective gloves/clothing. Nitrile rubber. Impervious gloves. 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

Appearance	Clear, colorless	Odor	odorless
Physical state	liquid	pH	1
Flash point		Not Applicable	

10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions of use and storage.
Incompatible Products	Strong bases. Metals. Combustible materials.
Conditions to avoid	Excessive heat. Incompatible products.
Hazardous decomposition products	Hazardous decomposition products formed under fire conditions -. Nitrogen oxides (NO _x). Hydrogen nitrate.
Hazardous polymerization	Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ferric nitrate.9H2O	3250 mg/kg (Rat)	None known	None known
Nitric acid	None known	None known	67 ppm (Rat) 4 h 130 mg/m ³ (Rat) 4 h
Water	90 mL/kg (Rat)	None known	None known

Chronic toxicity

Chemical name	ACGIH	IARC	NTP	OSHA
Ferric nitrate.9H2O	None known	Group 2A	None known	X
Nitric acid	None known	Group 2A	None known	X
Water	None known	None known	None known	None known

IARC: (International Agency for Research on Cancer)

Cancer Status: The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mists containing sulfuric acid" as a known human carcinogen, (IARC category 1). This classification applies only to mists containing sulfuric acid and not to sulfuric acid or sulfuric acid solutions

Chemical name	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine disrupting potential
Ferric nitrate.9H2O	None known	None known	None known
Nitric acid	None known	None known	None known
Water	None known	None known	None known

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Toxicity to Algae	Toxicity to Fish	Microtox	Daphnia Magna (Water Flea)
Ferric nitrate.9H2O	None known	None known	None known	None known
Nitric acid	None known	None known	None known	None known
Water	None known	None known	None known	None known
Chemical name	Log Pow			
Ferric nitrate.9H2O	None known			
Nitric acid	= -2.3 25 °C			
Water	None known			

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method

Dispose of contents/container in accordance with local regulation.

Chemical name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Ferric nitrate.9H2O - 7782-61-8	None known	None known	None known	None known
Nitric acid - 7697-37-2	None known	None known	None known	None known
Water - 7732-18-5	None known	None known	None known	None known

14. TRANSPORT INFORMATION

DOT

Proper shipping name	NITRIC ACID (<20%)
Hazard Class	8
UN-No	2031
Packing group	II
Reportable Quantity (RQ)	1000 lb

IATA

UN-No	2031
Proper shipping name	NITRIC ACID (<20%)
Hazard Class	8
Packing group	II

IMDG/IMO

Proper shipping name	NITRIC ACID (<20%)
Hazard Class	8
UN-No	2031
Packing group	II

15. REGULATORY INFORMATION

International Inventories

Component	TSCA	DSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Ferric nitrate.9H2O 7782-61-8 (1)	TSCA	DSL	EINECS/ELINCS	ENCS	X	KECL	X	X
Nitric acid 7697-37-2 (2.8)	Present	X	X	Present	X	KE-25911	X	X
Water 7732-18-5 (to 100%)	Present	X	X	ENCS	X	KE-35400	X	X

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

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

Chemical name	CAS-No	Weight %	SARA 313 - Threshold Values %
Ferric nitrate.9H2O	7782-61-8	1	1.0
Nitric acid	7697-37-2	2.8	1.0
Water	7732-18-5	to 100%	None known

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

Clean Water Act

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

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Ferric nitrate.9H2O 7782-61-8 (1)	None known	None known	None known	None known
Nitric acid 7697-37-2 (2.8)	1000 lb	None known	None known	X
Water 7732-18-5 (to 100%)	None known	None known	None known	None known

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

This product does not contain any HAPs.

Chemical name	CAS-No	Weight %	HAPS data	VOC Chemicals	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Ferric nitrate.9H2O	7782-61-8	1	None known	None known	None known	None known

Nitric acid	7697-37-2	2.8	None known	None known	None known	None known
Water	7732-18-5	to 100%	None known	None known	None known	None known

CERCLA

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ
Ferric nitrate.9H2O	1000 lb	None known
Nitric acid	1000 lb	1000 lb
Water	None known	None known

U.S. State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals

Chemical name	CAS-No	California Prop. 65
Ferric nitrate.9H2O	7782-61-8	None known
Nitric acid	7697-37-2	None known
Water	7732-18-5	None known

Chemical name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Ferric nitrate.9H2O	X	X	X	None known	X
Nitric acid	X	X	X	X	X
Water	None known	None known	None known	None known	None known

International Regulations**Mexico - Grade**

Chemical name	Carcinogen Status	Exposure Limits
Ferric nitrate.9H2O	None known	Mexico: TWA 1 mg/m ³ Mexico: STEL 2 mg/m ³
Nitric acid	None known	Mexico: TWA 2 ppm Mexico: TWA 5 mg/m ³ Mexico: STEL 4 ppm Mexico: STEL 10 mg/m ³
Water	None known	None known

CANADA

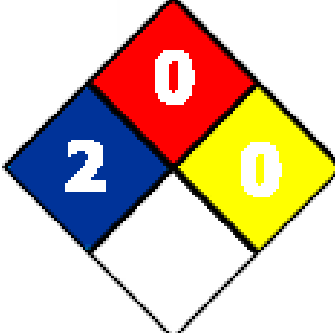

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

Component	WHMIS Hazard Class
Ferric nitrate.9H2O 7782-61-8 (1)	C
Nitric acid 7697-37-2 (2.8)	1 % C,E E C,D1B,E
Water 7732-18-5 (to 100%)	Uncontrolled product according to WHMIS classification criteria



Chemical name	NPRI
Nitric acid	X

16. OTHER INFORMATION

NFPA	HMIS	PPE	Transport Symbol						
	<table border="1"> <tr> <td data-bbox="513 201 732 243">Health Hazard</td> <td data-bbox="740 201 812 243">2</td> </tr> <tr> <td data-bbox="513 247 732 289">Fire Hazard</td> <td data-bbox="740 247 812 289">0</td> </tr> <tr> <td data-bbox="513 294 732 336">Reactivity</td> <td data-bbox="740 294 812 336">1</td> </tr> </table>	Health Hazard	2	Fire Hazard	0	Reactivity	1		
Health Hazard	2								
Fire Hazard	0								
Reactivity	1								

Prepared by
 Issuing Date
 Revision date
 Revision note

Regulatory Affairs Department
 09-3-2010
 26-Mar-2013
 MSDS was reviewed per Canada request - Canada requires MSDS to be dated within 3 years of the request. (M)SDS sections updated. 16.

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End of MSDS