

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

Product identifier

Product name Calcium Hardness Buffer

Other means of identification

Product Code(s) 7042

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

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 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3

EMERGENCY OVERVIEW

DANGER

Hazard statements

Causes severe skin burns and eye damage. May cause respiratory irritation. May cause drowsiness or dizziness.



Appearance Clear Colorless

Physical state liquid

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. Do not taste or swallow. Do not breathe dust/fume/gas/mist/vapors/spray. Wash face, hands and any exposed skin thoroughly after handling. 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 ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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

Harmful to aquatic life with long lasting effects

Unknown Acute Toxicity

1.5% of the mixture consists of ingredient(s) of unknown toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	Weight-%
Magnesate(2-), [[N,N`-1,2-ethanediybis[N-(carboxymethyl)glycin ato]](4-)-N,N`,O,O`,ON,ON`]-, disodium, (OC-6-21)-	14402-88-1	0.01
Chelant	Proprietary	0 - 10%
Chelant	Proprietary	<0.5
Citrate salt	Proprietary	1-5
Boric acid	10043-35-3	3
Buffer salts	Proprietary	5-10
Ethanolamine	141-43-5	10
Water	7732-18-5	to 100%

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. If symptoms persist, call a physician.

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

Drink plenty of water. 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.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Water spray, dry chemical, carbon dioxide (CO₂), 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 Ensure adequate ventilation. Use personal protection recommended in Section 8. Avoid contact with skin, eyes or clothing. Avoid breathing vapors or mists.

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 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 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
Magnesate(2-), [[N,N'-1,2-ethanediybis[N-(carboxymethyl)glycinato]](4-)-N,N',O,O',ON,ON ⁻]-, disodium, (OC-6-21)- 14402-88-1	-	-	Not Established
Chelant	-	-	Not Established
Chelant	-	-	Not Established
Citrate salt	-	-	Not Established
Boric acid 10043-35-3	6 mg/m ³ STEL (inhalable fraction, listed under Borate compounds, inorganic) 6 mg/m ³ STEL (inhalable fraction) TWA: 2 mg/m ³	-	Not Established
Buffer salts	-	-	Not Established
Ethanolamine 141-43-5	6 ppm STEL TWA: 3 ppm	TWA: 3 ppm TWA: 6 mg/m ³	IDLH: 30 ppm TWA: 3 ppm TWA: 8 mg/m ³ STEL: 6 ppm STEL: 15 mg/m ³
Water 7732-18-5	-	-	Not Established

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). If splashes are likely to occur: Face protection shield. Ensure that eyewash stations and safety showers are close to the workstation location.

Skin and body protection Protective gloves.

Respiratory protection None required under normal usage. Maintain adequate ventilation.

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	Odor	Slight
Appearance	Clear Colorless		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	9.6	No information available
Melting point / freezing point	No information available	
Boiling point / boiling range	No information available	
Flash point	No information available	
Evaporation rate	No information available	
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 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. Moisture. Incompatible Products.

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
Magnesate(2-), [[[N,N'-1,2-ethanediy]bis[N-(carboxy methyl)glycinato]](4-)-N,N',O,O',ON ,ON]-, disodium, (OC-6-21)- 14402-88-1	Not Established	Not Established	Not Established
Chelant	= 2 g/kg (Rat)	Not Established	Not Established
Chelant	> 5000 mg/kg (Rat)	Not Established	Not Established
Citrate salt	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
Buffer salts	= 3000 mg/kg (Rat)	Not Established	Not Established
Ethanolamine 141-43-5	= 1720 mg/kg (Rat)	= 1 mL/kg (Rabbit) = 1000 mg/kg (Rabbit)	Not Established
Water 7732-18-5	> 90 mL/kg (Rat)	Not Established	Not Established

Information on toxicological effects

Chemical name	ACGIH	IARC	NTP	OSHA
Magnesate(2-), [[[N,N'-1,2-ethanediy]bis[N-(c arboxymethyl)glycinato]](4-)- N,N',O,O',ON,ON]-, disodium, (OC-6-21)- 14402-88-1	Not Established	Not Established	Not Established	Not Established
Chelant	Not Established	Not Established	Not Established	Not Established
Chelant	Not Established	Not Established	Not Established	Not Established
Citrate salt	Not Established	Not Established	Not Established	Not Established
Boric acid 10043-35-3	Not Established	Not Established	Not Established	Not Established
Buffer salts	Not Established	Not Established	Not Established	Not Established
Ethanolamine 141-43-5	Not Established	Not Established	Not Established	Not Established
Water 7732-18-5	Not Established	Not Established	Not Established	Not Established

ATEmix (oral) 10499
ATEmix (dermal) 9442 mg/kg
ATEmix (inhalation-dust/mist) 15 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Toxicity to Algae	Toxicity to Fish	Daphnia Magna (Water Flea)
Magnesate(2-),	Not Established	Not Established	Not Established

[[N,N'-1,2-ethanediy]bis[N-(carboxymethyl)glycinato]](4-)-N,N',O,O',ON,ON'-, disodium, (OC-6-21)-14402-88-1			
Chelant	Not Established	320: 96 h <i>Poecilia reticulata</i> mg/L LC50 semi-static	Not Established
Chelant	Not Established	24000: 96 h <i>Gambusia affinis</i> mg/L LC50 static	Not Established
Citrate salt	18000 - 32000: 96 h <i>Chlorella vulgaris</i> mg/L EC50	18000 - 32000: 96 h <i>Poecilia reticulata</i> mg/L LC50	5600 - 10000: 48 h <i>Daphnia magna</i> mg/L EC50
Boric acid 10043-35-3	Not Established	1020: 72 h <i>Carassius auratus</i> mg/L LC50 flow-through	115 - 153: 48 h <i>Daphnia magna</i> mg/L EC50
Buffer salts	Not Established	1516: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static	120: 72 h <i>Daphnia magna</i> mg/L EC50
Ethanolamine 141-43-5	15: 72 h <i>Desmodemus subspicatus</i> mg/L EC50	114 - 196: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static 300 - 1000: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 227: 96 h <i>Pimephales promelas</i> mg/L LC50 flow-through 3684: 96 h <i>Brachydanio rerio</i> mg/L LC50 static 200: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 flow-through	65: 48 h <i>Daphnia magna</i> mg/L EC50
Water 7732-18-5	Not Established	Not Established	Not Established

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
Magnesate(2-), [[N,N'-1,2-ethanediy]bis[N-(carboxymethyl)glycinato]](4-)-N,N',O,O',ON,ON'-, disodium, (OC-6-21)-14402-88-1	Not Established
Chelant	Not Established
Chelant	Not Established
Citrate salt	Not Established
Boric acid 10043-35-3	-0.757
Buffer salts	-1.72
Ethanolamine 141-43-5	-1.91
Water 7732-18-5	Not Established

13. DISPOSAL CONSIDERATIONS

Disposal Methods

This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261). 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
Magnesate(2-), [[N,N'-1,2-ethanediy]bis[N-(carboxymethyl)glycinato]](4-)-	Not Established	-	Not Established	Not Established

N,N',O,O',ON,ON']-, disodium, (OC-6-21)-14402-88-1				
Chelant	Not Established	-	Not Established	Not Established
Chelant	Not Established	-	Not Established	Not Established
Citrate salt	Not Established	-	Not Established	Not Established
Boric acid 10043-35-3	Not Established	-	Not Established	Not Established
Buffer salts	Not Established	-	Not Established	Not Established
Ethanolamine 141-43-5	Not Established	-	Not Established	Not Established
Water 7732-18-5	Not Established	-	Not Established	Not Established

Chemical name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Magnesate(2-), [[N,N' -1,2-ethanediy]bis[N-(carboxymethyl)glycinato]](4-)-N,N',O,O',ON,ON']-, disodium, (OC-6-21)-14402-88-1	Not Established	Not Established	Not Established	Not Established
Chelant	Not Established	Not Established	Not Established	Not Established
Chelant	Not Established	Not Established	Not Established	Not Established
Citrate salt	Not Established	Not Established	Not Established	Not Established
Boric acid 10043-35-3	Not Established	Not Established	Not Established	Not Established
Buffer salts	Not Established	Not Established	Not Established	Not Established
Ethanolamine 141-43-5	Not Established	Not Established	Not Established	Not Established
Water 7732-18-5	Not Established	Not Established	Not Established	Not Established

Chemical name	California Hazardous Waste Status
Magnesate(2-), [[N,N' -1,2-ethanediy]bis[N-(carboxymethyl)glycinato]](4-)-N,N',O,O',ON,ON']-, disodium, (OC-6-21)-14402-88-1	-
Chelant	-
Chelant	-
Citrate salt	-
Boric acid 10043-35-3	-
Buffer salts	-
Ethanolamine 141-43-5	-
Water 7732-18-5	-

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 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 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 %
Magnesate(2-), [[N,N'-1,2-ethanediy]bis[N-(carboxymethyl)glycinato]](4-)-N,N',O,O',ON, ON]-, disodium, (OC-6-21)- 14402-88-1	Not Established
Chelant	Not Established
Chelant	Not Established
Citrate salt	Not Established
Boric acid 10043-35-3	Not Established
Buffer salts	Not Established
Ethanolamine 141-43-5	Not Established
Water 7732-18-5	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
Magnesate(2-), [[[N,N'-1,2-ethanediy]bis[N-(carboxymethyl)glycinato]](4-)-N,N',O,O',ON,ON']-, disodium, (OC-6-21)-14402-88-1	Not Established	Not Established	Not Established	Not Established
Chelant	Not Established	Not Established	Not Established	Not Established
Chelant	Not Established	Not Established	Not Established	Not Established
Citrate salt	Not Established	Not Established	Not Established	Not Established
Boric acid 10043-35-3	Not Established	Not Established	Not Established	Not Established
Buffer salts	Not Established	Not Established	Not Established	Not Established
Ethanolamine 141-43-5	Not Established	Not Established	Not Established	Not Established
Water 7732-18-5	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
Magnesate(2-), [[[N,N'-1,2-ethanediy]bis[N-(carboxymethyl)glycinato]](4-)-N,N',O,O',ON,ON']-, disodium, (OC-6-21)-14402-88-1	-	Not Established	-
Chelant	-	Not Established	-
Chelant	-	Not Established	-
Citrate salt	-	Not Established	-
Boric acid 10043-35-3	-	Not Established	-
Buffer salts	-	Not Established	-
Ethanolamine 141-43-5	-	Not Established	-
Water 7732-18-5	-	Not Established	-

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

Chemical name	California Proposition 65
Magnesate(2-), [[[N,N'-1,2-ethanediy]bis[N-(carboxymethyl)glycinato]](4-)-N,N',O,O',ON,ON']-, disodium, (OC-6-21)-14402-88-1	Not Established
Chelant	Not Established
Chelant	Not Established
Citrate salt	Not Established

Boric acid 10043-35-3	Not Established
Buffer salts	Not Established
Ethanolamine 141-43-5	Not Established
Water 7732-18-5	Not Established

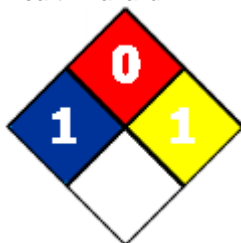
U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Magnesate(2-), [[[N,N'-1,2-ethanediybis[N-(carboxy methyl)glycinato]](4-)-N,N',O,O',ON ,ON']-, disodium, (OC-6-21)- 14402-88-1	Not Established	Not Established	Not Established
Chelant	Not Established	Not Established	Not Established
Chelant	Not Established	Not Established	Not Established
Citrate salt	Not Established	Not Established	Not Established
Boric acid 10043-35-3	X	Not Established	Not Established
Buffer salts	Not Established	Not Established	Not Established
Ethanolamine 141-43-5	X	X	X
Water 7732-18-5	Not Established	Not Established	X

CPSC (Consumer Product Safety Commission) - Specially Regulated Substances

16. OTHER INFORMATION

NFPA Health hazard 1 Flammability 0 Instability 1 Physical and Chemical Hazards N/A
 Health hazard 2 Flammability 0 Stability 1



Health Hazard	2
Fire Hazard	0
Reactivity	1

Prepared by Regulatory Affairs Department
 Issuing Date Jun-12-2015
 Revision Date Jan-07-2016

Revision note Boric acid classification differs between the US and EU. It is not classified in the US but it is in the EU. Boric acid is listed on the "List of Substances of Very High Concern (SVHC)" according to Regulation (EC) No. 1907/2006 (REACH) Repr. 1B; H360FD: C >5.5%

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