



Issuing Date Oct-07-2011

Revision Date Oct-14-2014

Revision Number 0.01

1. PRODUCT AND COMPANY IDENTIFICATION

Product name HARDNESS REAGENT #5

Product Code(s) 4483

Synonyms none

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
Harmful if swallowed or if inhaled
Vapor and liquid cause irritation to eyes, skin, and respiratory system
Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea

Appearance Clear, colorless **Physical state** liquid **Odor** Sulfur, Rotten-egg like

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 Inhalation, skin contact, and ingestion, Inhalation, Skin Contact, Eye Contact.

Acute toxicity

- Eyes** Irritating to eyes. May cause burns. May cause redness, itching, and pain.
- Skin** Causes irritation. Symptoms can include redness, itching, and pain. Prolonged skin contact may cause burns.
- Inhalation** Irritating to the respiratory system; may cause symptoms that include coughing and shortness of breath. May cause additional affects as listed under "Ingestion". May be harmful if inhaled.
- Ingestion** Harmful if swallowed. Causes irritation or burns to the digestive and respiratory tract. May cause abdominal pain, diarrhea, vomiting.

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS-No	Weight %
Tartrate, potassium sodium	6381-59-5	1
Sodium sulfide, nonahydrate	1313-84-4	1
Sodium hydroxide	1310-73-2	1-2
Sodium tetraborate, decahydrate	1303-96-4	4
Water, distilled	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. If symptoms persist, call a physician. Do not breathe dust/fume/gas/mist/vapors/spray.
Eye contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.
Skin contact	Consult a physician if necessary. Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes.
Inhalation	Move to fresh air. Consult a physician. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.
Ingestion	Do NOT induce vomiting. Drink plenty of water. Rinse mouth. If symptoms persist or develop contact physician.
Protection of First-aiders	Use personal protective equipment.

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.

<u>NFPA</u>	Health hazard 2	Flammability 0	Stability 0	Physical and Chemical Hazards -
<u>HMIS</u>	Health hazard 2	Flammability 0	Stability 1	

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Ensure adequate ventilation. Avoid contact with skin, eyes, and clothing. Refer to Section 8. Wear protective gloves/clothing and eye/face protection.
Methods for containment	Soak up with inert absorbent material, containerize, and hold for disposal. Dispose according to federal, state, and local regulations.
Methods for cleaning up	Clean contaminated surface thoroughly. Following product recovery, flush area with water.

7. HANDLING AND STORAGE

Handling	Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not eat, drink, or smoke when using this product. Refer to Section 8.
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Storage

Keep container tightly closed in a dry and well-ventilated place. Protect from light. Keep away from heat and incompatibles. Keep out of the reach of children.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical name	CAS-No	ACGIH TLV	OSHA PEL	NIOSH IDLH
Tartrate, potassium sodium	6381-59-5	None known	None known	None known
Sodium sulfide, nonahydrate	1313-84-4	None known	None known	None known
Sodium hydroxide	1310-73-2	Ceiling: 2 mg/m ³	TWA: 2 mg/m ³	IDLH: 10 mg/m ³ Ceiling: 2 mg/m ³
Sodium tetraborate, decahydrate	1303-96-4	6 mg/m ³ STEL (inhalable fraction, listed under Borate compounds, inorganic) 6 mg/m ³ STEL (inhalable fraction) TWA: 2 mg/m ³	None known	TWA: 5 mg/m ³ TWA: 1 mg/m ³
Water, distilled	7732-18-5	None known	None known	None known

NIOSH IDLH: *Immediately Dangerous to Life or Health*

Personal protective equipment**Eye/face Protection**

Safety glasses with side-shields.

Skin and body protection

Wear protective gloves/clothing. Gloves & Lab Coat. Nitrile rubber.

Respiratory protection

Use mechanical ventilation (fume hood). When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear, colorless	Odor	Sulfur, Rotten-egg like
Physical state	liquid	pH	12-13
Flash point	Not Applicable	Autoignition temperature	Not Applicable
Flammability Limits in Air		Not Applicable	
Vapor pressure	<17 mmHg @ 20°C	Vapor density	<1(Air = 1)

10. STABILITY AND REACTIVITY

Stability	Stable.
Incompatible Products	Strong acids. Metals.
Conditions to avoid	None known.
Hazardous decomposition products	Hydrogen sulfide.
Hazardous Reactions	Contact with acids liberates very toxic gas. Contact with metals may evolve flammable hydrogen gas.
Hazardous polymerization	Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Chemical name	CAS-No	LD50 Oral	LD50 Dermal	LC50 Inhalation
Tartrate, potassium sodium	6381-59-5	None known	None known	None known
Sodium sulfide, nonahydrate	1313-84-4	= 208 mg/kg (Rat)	< 340 mg/kg (Rabbit)	None known
Sodium hydroxide	1310-73-2	None known	= 1350 mg/kg (Rabbit)	None known
Sodium tetraborate, decahydrate	1303-96-4	= 2660 mg/kg (Rat) = 3493 mg/kg (Rat)	> 10000 mg/kg (Rabbit) > 2000 mg/kg (Rabbit)	None known
Water, distilled	7732-18-5	> 90 mL/kg (Rat)	None known	None known

Carcinogenicity

Chemical name	CAS-No	ACGIH	IARC	NTP	OSHA
Tartrate, potassium sodium	6381-59-5	None known	None known	None known	None known
Sodium sulfide, nonahydrate	1313-84-4	None known	None known	None known	None known
Sodium hydroxide	1310-73-2	None known	None known	None known	None known
Sodium tetraborate, decahydrate	1303-96-4	None known	Group 2A	None known	X
Water, distilled	7732-18-5	None known	None known	None known	None known

Chemical name	CAS-No	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine disrupting potential
Tartrate, potassium sodium	6381-59-5	None known	None known	None known
Sodium sulfide, nonahydrate	1313-84-4	None known	None known	None known
Sodium hydroxide	1310-73-2	None known	None known	None known
Sodium tetraborate, decahydrate	1303-96-4	None known	None known	None known
Water, distilled	7732-18-5	None known	None known	None known

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	CAS-No	Toxicity to Algae	Toxicity to Fish	Microtox	Daphnia Magna (Water Flea)
Tartrate, potassium sodium	6381-59-5	None known	None known	None known	None known
Sodium sulfide, nonahydrate	1313-84-4	None known	7.7 - 29.1: 96 h <i>Poecilia reticulata</i> mg/L LC50	None known	2.1: 48 h <i>Daphnia magna</i> mg/L EC50
Sodium hydroxide	1310-73-2	None known	45.4: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static	None known	None known
Sodium tetraborate, decahydrate	1303-96-4	2.6 - 21.8: 96 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 static 158: 96 h <i>Desmodesmus subspicatus</i> mg/L EC50	340: 96 h <i>Limanda limanda</i> mg/L LC50	None known	1085 - 1402: 48 h <i>Daphnia magna</i> mg/L LC50
Water, distilled	7732-18-5	None known	None known	None known	None known

Chemical name	CAS-No	Log Pow
Tartrate, potassium sodium	6381-59-5	None known
Sodium sulfide, nonahydrate	1313-84-4	-3.5 - 3.5
Sodium hydroxide	1310-73-2	None known
Sodium tetraborate, decahydrate	1303-96-4	None known
Water, distilled	7732-18-5	None known

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method

Dispose according to federal, state, and local regulations.

Chemical name	CAS-No	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Tartrate, potassium sodium	6381-59-5	None known	None known	None known	None known
Sodium sulfide, nonahydrate	1313-84-4	None known	None known	None known	None known
Sodium hydroxide	1310-73-2	None known	None known	None known	None known
Sodium tetraborate, decahydrate	1303-96-4	None known	None known	None known	None known
Water, distilled	7732-18-5	None known	None known	None known	None known

Chemical name	California Hazardous Waste Status
Tartrate, potassium sodium 6381-59-5	-

Sodium sulfide, nonahydrate 1313-84-4	-
Sodium hydroxide 1310-73-2	-
Sodium tetraborate, decahydrate 1303-96-4	-
Water, distilled 7732-18-5	-

14. TRANSPORT INFORMATION

DOT

Proper shipping name CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (1% Sodium sulfide)
Hazard Class 8
UN-No 3266
Packing group III

IATA

UN-No 3266
Proper shipping name CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (1% Sodium sulphide)
Hazard Class 8
Packing group III

IMDG/IMO

Proper shipping name CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (1% Sodium sulphide)
Hazard Class 8
UN-No 3266
Packing group III

15. REGULATORY INFORMATION

International Inventories

Chemical name	CAS-No	TSCA	DSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Tartrate, potassium sodium	6381-59-5	TSCA	DSL	EINECS/ELINCS	ENCS	X	KECL	X	X
Sodium sulfide, nonahydrate	1313-84-4	TSCA	DSL	EINECS/ELINCS	ENCS	IECSC	KECL	X	X
Sodium hydroxide	1310-73-2	Present	X	X	Present	X	KE-31487	X	X
Sodium tetraborate, decahydrate	1303-96-4	Present	X	EINECS/ELINCS	Present	X	KE-03483	X	X
Water, distilled	7732-18-5	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 %
Tartrate, potassium sodium	6381-59-5	1	None known
Sodium sulfide, nonahydrate	1313-84-4	1	None known
Sodium hydroxide	1310-73-2	1-2	None known
Sodium tetraborate, decahydrate	1303-96-4	4	None known
Water, distilled	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

Chemical name	CAS-No	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Tartrate, potassium sodium	6381-59-5	None known	None known	None known	None known
Sodium sulfide, nonahydrate	1313-84-4	None known	None known	None known	None known
Sodium hydroxide	1310-73-2	None known	None known	None known	None known
Sodium tetraborate, decahydrate	1303-96-4	None known	None known	None known	None known
Water, distilled	7732-18-5	None known	None known	None known	None known

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

Chemical name	CAS-No	Weight %	HAPS data	VOC Chemicals	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Tartrate, potassium sodium	6381-59-5	1	None known	None known	None known	None known
Sodium sulfide, nonahydrate	1313-84-4	1	None known	None known	None known	None known
Sodium hydroxide	1310-73-2	1-2	None known	None known	None known	None known
Sodium tetraborate, decahydrate	1303-96-4	4	None known	None known	None known	None known
Water, distilled	7732-18-5	to 100%	None known	None known	None known	None known

CERCLA

Chemical name	CAS-No	Hazardous Substances RQs	CERCLA/SARA RQ
Tartrate, potassium sodium	6381-59-5	None known	None known
Sodium sulfide, nonahydrate	1313-84-4	None known	None known
Sodium hydroxide	1310-73-2	1000 lb	None known
Sodium tetraborate, decahydrate	1303-96-4	None known	None known
Water, distilled	7732-18-5	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
Tartrate, potassium sodium	6381-59-5	None known
Sodium sulfide, nonahydrate	1313-84-4	None known
Sodium hydroxide	1310-73-2	None known
Sodium tetraborate, decahydrate	1303-96-4	None known
Water, distilled	7732-18-5	None known

U.S. State Right-to-Know Regulations

Chemical name	CAS-No	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Tartrate, potassium sodium	6381-59-5	None known	None known	None known	None known	None known
Sodium sulfide, nonahydrate	1313-84-4	X	X	None known	None known	None known
Sodium hydroxide	1310-73-2	X	X	X	None known	X
Sodium tetraborate, decahydrate	1303-96-4	X	X	X	None known	X
Water, distilled	7732-18-5	None known	None known	X	None known	None known

International Regulations**Mexico - Grade**

Chemical name	CAS-No	Carcinogen Status	Exposure Limits
Tartrate, potassium sodium	6381-59-5	None known	None known
Sodium sulfide, nonahydrate	1313-84-4	None known	None known

Sodium hydroxide	1310-73-2	None known	None known
Sodium tetraborate, decahydrate	1303-96-4	None known	Mexico: TWA 5 mg/m ³ Mexico: TWA 1 mg/m ³
Water, distilled	7732-18-5	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	CAS-No	WHMIS Hazard Class
Tartrate, potassium sodium 6381-59-5 (1)	6381-59-5	Uncontrolled product according to WHMIS classification criteria
Sodium sulfide, nonahydrate 1313-84-4 (1)	1313-84-4	Not Determined
Sodium hydroxide 1310-73-2 (1-2)	1310-73-2	1 % E
Sodium tetraborate, decahydrate 1303-96-4 (4)	1303-96-4	1 % D2B
Water, distilled 7732-18-5 (to 100%)	7732-18-5	Uncontrolled product according to WHMIS classification criteria



Chemical name	CAS-No	NPRI
Tartrate, potassium sodium	6381-59-5	
Sodium sulfide, nonahydrate	1313-84-4	
Sodium hydroxide	1310-73-2	
Sodium tetraborate, decahydrate	1303-96-4	
Water, distilled	7732-18-5	

16. OTHER INFORMATION

NFWA	HMIS	PPE	Transport Symbol						
	<table border="1" style="font-size: small;"> <tr> <td style="background-color: #0000FF; color: white;">Health Hazard</td> <td style="text-align: center; font-weight: bold;">2</td> </tr> <tr> <td style="background-color: #FF0000; color: white;">Fire Hazard</td> <td style="text-align: center; font-weight: bold;">0</td> </tr> <tr> <td style="background-color: #FFFF00; color: black;">Reactivity</td> <td style="text-align: center; font-weight: bold;">1</td> </tr> </table>	Health Hazard	2	Fire Hazard	0	Reactivity	1		
Health Hazard	2								
Fire Hazard	0								
Reactivity	1								

<p>Prepared by Issuing Date Revision Date Revision note</p>	<p>Regulatory Affairs Department Oct-07-2011 Oct-14-2014 MSDS was reviewed per Canada request - Canada requires MSDS to be dated within 3 years of the request.</p>
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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

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

Product identifier

Product name Hardness Reagent 5 Solution

Other means of identification

Product Code(s) 4483

UN-No 3266

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
Serious eye damage/eye irritation	Category 1

EMERGENCY OVERVIEW

DANGER

Hazard statements

Causes severe skin burns and eye damage.



Appearance Clear, colorless

Physical state liquid

Odor Sulfur Rotten-egg like

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.

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.

IF SWALLOWED. Rinse mouth. 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

Unknown Acute Toxicity

1% of the mixture consists of ingredient(s) of unknown toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS*

Chemical name	CAS No	Weight-%
Sodium hydroxide	1310-73-2	1
Potassium sodium tartrate	6381-59-5	1
Sodium sulfide	1313-84-4	1
Sodium tetraborate, decahydrate	1303-96-4	4
Water	7732-18-5	to 100%

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.
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 plenty of water for at least 15 minutes. Remove and isolate contaminated clothing and shoes. Wash contaminated clothing before reuse. Call a physician immediately.
Inhalation	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
Ingestion	Do NOT induce vomiting. Drink plenty of water. Call a physician immediately. Never give anything by mouth to an unconscious person.
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

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. 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 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

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. Separate from acids. Keep out of the reach of children.

Incompatible Products Acids.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sodium hydroxide 1310-73-2	Ceiling: 2 mg/m ³	TWA: 2 mg/m ³ (vacated) Ceiling: 2 mg/m ³	IDLH: 10 mg/m ³ Ceiling: 2 mg/m ³
Potassium sodium tartrate 6381-59-5	-	-	Not Established
Sodium sulfide 1313-84-4	-	-	Not Established
Sodium tetraborate, decahydrate 1303-96-4	STEL: 6 mg/m ³ inhalable fraction TWA: 2 mg/m ³ inhalable fraction	(vacated) TWA: 10 mg/m ³	TWA: 5 mg/m ³ TWA: 1 mg/m ³
Water 7732-18-5	-	-	Not Established

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).

Skin and body protection Wear protective gloves/clothing. Gloves & Lab Coat. 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 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 Sulfur Rotten-egg like

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	12	
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 Incompatible Products.
Incompatible materials Acids.
Hazardous decomposition products

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Component identification

Chemical name	ATEmix (oral)	ATEmix (dermal)	Inhalation LC50
Sodium hydroxide 1310-73-2	Not Established	= 1350 mg/kg (Rabbit)	Not Established
Potassium sodium tartrate 6381-59-5	Not Established	Not Established	Not Established

Sodium sulfide 1313-84-4	= 208 mg/kg (Rat)	< 340 mg/kg (Rabbit)	Not Established
Sodium tetraborate, decahydrate 1303-96-4	= 2660 mg/kg (Rat) = 3493 mg/kg (Rat)	> 10000 mg/kg (Rabbit) > 2000 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
Sodium hydroxide 1310-73-2	Not Established	Not Established	Not Established	Not Established
Potassium sodium tartrate 6381-59-5	Not Established	Not Established	Not Established	Not Established
Sodium sulfide 1313-84-4	Not Established	Not Established	Not Established	Not Established
Sodium tetraborate, decahydrate 1303-96-4	Not Established	Group 2A	Not Established	X
Water 7732-18-5	Not Established	Not Established	Not Established	Not Established

ATEmix (oral) 28,541.00 mg/kg
ATEmix (dermal) 17,600.00 mg/kg

12. ECOLOGICAL INFORMATION**Ecotoxicity**

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
Potassium sodium tartrate 6381-59-5	Not Established	Not Established	Not Established
Sodium sulfide 1313-84-4	Not Established	7.7 - 29.1: 96 h Poecilia reticulata mg/L LC50	2.1: 48 h Daphnia magna mg/L EC50
Sodium tetraborate, decahydrate 1303-96-4	2.6 - 21.8: 96 h Pseudokirchneriella subcapitata mg/L EC50 static 158: 96 h Desmodesmus subspicatus mg/L EC50	340: 96 h Limanda limanda mg/L LC50	1085 - 1402: 48 h Daphnia magna mg/L LC50
Water 7732-18-5	Not Established	Not Established	Not Established

Persistence and degradability

No information available.

Bioaccumulation/Accumulation

No information available.

Chemical name	Log Pow
Sodium hydroxide 1310-73-2	Not Established
Potassium sodium tartrate 6381-59-5	Not Established
Sodium sulfide 1313-84-4	-3.5 - 3.5
Sodium tetraborate, decahydrate 1303-96-4	Not Established
Water 7732-18-5	Not Established

13. DISPOSAL CONSIDERATIONS**Disposal Methods**

Dispose according to federal, state, and local regulations.

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
Potassium sodium tartrate 6381-59-5	Not Established	-	Not Established	Not Established
Sodium sulfide 1313-84-4	Not Established	-	Not Established	Not Established
Sodium tetraborate, decahydrate 1303-96-4	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
Sodium hydroxide 1310-73-2	Not Established	Not Established	Not Established	Not Established
Potassium sodium tartrate 6381-59-5	Not Established	Not Established	Not Established	Not Established
Sodium sulfide 1313-84-4	Not Established	Not Established	Not Established	Not Established
Sodium tetraborate, decahydrate 1303-96-4	Not Established	Not Established	Not Established	Not Established
Water 7732-18-5	Not Established	Not Established	Not Established	Not Established

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical name	California Hazardous Waste Status
Sodium hydroxide 1310-73-2	Toxic Corrosive
Potassium sodium tartrate 6381-59-5	-
Sodium sulfide 1313-84-4	-
Sodium tetraborate, decahydrate 1303-96-4	Toxic
Water 7732-18-5	-

14. TRANSPORT INFORMATION**DOT**

Proper shipping name CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (1% Sodium sulfide)
UN-No 3266
Hazard Class 8
Packing group III

UN-No 3266
Proper shipping name CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (1% Sodium sulfide)
Hazard Class 8
Packing group III

IATA

Proper shipping name CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (1% Sodium sulfide)
UN-No 3266
Proper shipping name CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (1% Sodium sulfide)
Hazard Class 8
Packing group III

IMDG/IMO

Proper shipping name	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (1% Sodium sulfide)
UN-No	3266
Proper shipping name	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (1% Sodium sulfide)
Hazard Class	8
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	Does not comply
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 %
Sodium hydroxide 1310-73-2	Not Established
Potassium sodium tartrate 6381-59-5	Not Established
Sodium sulfide 1313-84-4	Not Established
Sodium tetraborate, decahydrate 1303-96-4	Not Established
Water 7732-18-5	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
Sodium hydroxide 1310-73-2	1000 lb	Not Established	Not Established	X

Potassium sodium tartrate 6381-59-5	Not Established	Not Established	Not Established	Not Established
Sodium sulfide 1313-84-4	Not Established	Not Established	Not Established	Not Established
Sodium tetraborate, decahydrate 1303-96-4	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, 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
Potassium sodium tartrate 6381-59-5	-	Not Established	-
Sodium sulfide 1313-84-4	-	Not Established	-
Sodium tetraborate, decahydrate 1303-96-4	-	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
Sodium hydroxide 1310-73-2	Not Established
Potassium sodium tartrate 6381-59-5	Not Established
Sodium sulfide 1313-84-4	Not Established
Sodium tetraborate, decahydrate 1303-96-4	Not Established
Water 7732-18-5	Not Established

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Sodium hydroxide 1310-73-2	X	X	X
Potassium sodium tartrate 6381-59-5	Not Established	Not Established	Not Established
Sodium sulfide 1313-84-4	X	X	Not Established
Sodium tetraborate, decahydrate 1303-96-4	X	X	X
Water 7732-18-5	Not Established	Not Established	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 Add POISON to label, 16 CFR 1500.129

16. OTHER INFORMATION

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



Health Hazard	2
Fire Hazard	0
Reactivity	1

Prepared by

Regulatory Affairs Department

Issuing Date

May-27-2015

Revision Date

Jan-21-2016

Reason for revision

(M)SDS sections updated 2 4 12 16

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

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product identifier - Labeling according to Regulations (EC) No 1272/2008**

Product Code(s) 4483
Product name Hardness Reagent 5 Solution

Synonyms none
Substance or Preparation Preparation

1.2. Relevant identified uses of the substance or mixture and uses advised against

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

1.3. Details of the supplier of the safety data sheet

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

Contact for timely inquiries in regards to this product:

Person Regulatory Affairs Department
E-mail address msds@lamotte.com

1.4. 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

Section 2: HAZARD(S) IDENTIFICATION**2.1. Classification of the substance or mixture**

2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]

Skin corrosion/irritation	Category 1 - (H314)
Serious eye damage/eye irritation	Category 1 - (H318)

2.1.2 Classification according to Directive 67/548/EEC or 1999/45/EC
For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

Symbol(s)
C - Corrosive

R-code(s)
C;R35

2.2. Label elements

Product identifier**Pictogram(s)****Signal word**

DANGER

Hazard statements

H314 - Causes severe skin burns and eye damage

Precautionary Statements - EU (§28, 1272/2008)

P280 - Wear protective gloves/protective clothing/eye protection/face protection. P260 - Do not breathe dust/fume/gas/mist/vapors/spray. P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P280 - Wear eye protection/ face protection. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 - Immediately call a POISON CENTER or doctor/physician.

2.3. Other hazards

Harmful to aquatic life

Section 3: COMPOSITION/ INFORMATION OF INGREDIENTS

3.1 Substances

Not Applicable

3.2 Mixtures

Chemical name	EC No	CAS No	Weight-%	Classification	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH Reg. No
Sodium hydroxide	EEC No. Present	1310-73-2	1	C; R35	Skin Corr. 1A (H314)	-
Sodium sulfide	-	1313-84-4	1	Xn; R22 T; R24 R31 C; R34 N; R50	Acute Tox. 4 (H302) Acute Tox. 3 (H311) Skin Corr. 1B (H314) Aquatic Acute 1 (H400)	-
Sodium tetraborate, decahydrate	-	1303-96-4	4	Repr.Cat.2; R60-61	Repr. 1B (H360FD)	-

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures**General advice**

Do not get in eyes, on skin, or on clothing. Do not breathe dust/fume/gas/mist/vapors/spray.

Inhalation

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

Skin contact

Wash off immediately with plenty of water for at least 15 minutes. Remove and isolate contaminated clothing and shoes. Wash contaminated clothing before reuse. Call a

	physician immediately.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.
Ingestion	Do NOT induce vomiting. Drink plenty of water. Call a physician immediately. Never give anything by mouth to an unconscious person.
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.

4.2. Most important symptoms and effects, both acute and delayed

None known

4.3. Indication of any immediate medical attention and special treatment needed

No data available

Section 5: FIREFIGHTER MEASURES

5.1. Extinguishing media**Suitable extinguishing media**

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

Unsuitable extinguishing media

No information available

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus and full protective gear.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. 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.

For emergency responders

Use personal protection recommended in Section 8.

6.2. Environmental precautions

See Section 12 for additional Ecological Information.

6.3. 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 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.

6.4. Reference to other sections

For disposal see section 13.

Methods for Containment and Clean Up Pick up and transfer to properly labelled containers.

Section 7: HANDLING AND STORAGE

7.1. 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.

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.

7.2. Conditions for safe storage, including any incompatibilities

Storage

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

7.3. Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1. Control parameters

Chemical name	Eu	The United Kingdom	France	Spain	Germany
Sodium hydroxide 1310-73-2	Not Established	Not Established	TWA: 2 mg/m ³	-	-
Sodium sulfide 1313-84-4	Not Established	Not Established	Not Established	-	-
Sodium tetraborate, decahydrate 1303-96-4	Not Established	STEL: 15 mg/m ³ TWA: 5 mg/m ³	TWA: 5 mg/m ³ TWA: 1 mg/m ³	-	-
Chemical name	Italy	Portugal	The Netherlands	Finland	Denmark
Sodium hydroxide 1310-73-2	-	Not Established	-	Not Established	Not Established
Sodium sulfide 1313-84-4	-	Not Established	-	Not Established	Not Established
Sodium tetraborate, decahydrate 1303-96-4	-	STEL: 6 mg/m ³ TWA: 2 mg/m ³	-	Not Established	TWA: 2 mg/m ³ Skin
Chemical name	Austria	Switzerland	Poland	Norway	Ireland
Sodium hydroxide 1310-73-2	-	STEL: 2 mg/m ³	Not Established	Not Established	Not Established
Sodium sulfide 1313-84-4	-	Not Established	Not Established	Not Established	Not Established
Sodium tetraborate, decahydrate 1303-96-4	-	STEL: 5 mg/m ³	Not Established	TWA: 5 mg/m ³ STEL: 10 mg/m ³	Not Established

Chemical name	European Union	United Kingdom	France	Spain	Germany
Sodium hydroxide 1310-73-2	-	-	-	-	-
Sodium sulfide 1313-84-4	-	-	-	-	-
Sodium tetraborate, decahydrate 1303-96-4	-	-	-	-	-
Chemical name	Italy	Portugal	Netherlands	Finland	Denmark
Sodium hydroxide 1310-73-2	-	-	-	-	-
Sodium sulfide	-	-	-	-	-

1313-84-4					
Sodium tetraborate, decahydrate 1303-96-4	-	-	-	-	-
Chemical name	Austria	Switzerland	Poland	Norway	Ireland
Sodium hydroxide 1310-73-2	-	-	-	-	-
Sodium sulfide 1313-84-4	-	-	-	-	-
Sodium tetraborate, decahydrate 1303-96-4	-	-	-	-	-

Derived No Effect Level (DNEL) No information available.

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering Measures
Showers
Eyewash stations
Ventilation systems.

Personal protective equipment

Eye/Face Protection Wear safety glasses with side shields (or goggles).
Skin and body protection Long sleeved clothing.

Environmental exposure controls Do not allow material to contaminate ground water system.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state liquid
Appearance Clear, colorless
Odor Sulfur Rotten-egg like

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	12	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:		Not applicable
Lower flammability limit:		Not applicable
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	

9.2. 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

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerization

Hazardous polymerization does not occur.

Hazardous Reactions

None under normal processing.

10.4. Conditions to avoid

Incompatible Products.

10.5. Incompatible materials

Acids.

10.6. Hazardous decomposition products

None under normal use.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity

Product Information

Inhalation

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

Eye contact

There is no data available for this product.

Skin contact

There is no data available for this product.

Ingestion

There is no data available for this product.

Unknown Acute Toxicity

1% of the mixture consists of ingredient(s) of unknown toxicity.

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

ATEmix (oral) 28,541.00 mg/kg

ATEmix (dermal) 17,600.00 mg/kg

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Sodium hydroxide		= 1350 mg/kg (Rabbit)	
Sodium sulfide	= 208 mg/kg (Rat)	< 340 mg/kg (Rabbit)	
Sodium tetraborate, decahydrate	= 2660 mg/kg (Rat) = 3493 mg/kg (Rat)	> 10000 mg/kg (Rabbit) > 2000 mg/kg (Rabbit)	

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Sensitization	No information available.
Mutagenic effects	No information available.
Carcinogenic effects	No information available.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	No information available.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Harmful to aquatic life

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

Chemical name	Toxicity to Algae	Toxicity to Fish	Daphnia Magna (Water Flea)
Sodium hydroxide	Not Established	45.4: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static	Not Established
Sodium sulfide	Not Established	7.7 - 29.1: 96 h <i>Poecilia reticulata</i> mg/L LC50	2.1: 48 h <i>Daphnia magna</i> mg/L EC50
Sodium tetraborate, decahydrate	2.6 - 21.8: 96 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 static 158: 96 h <i>Desmodesmus subspicatus</i> mg/L EC50	340: 96 h <i>Limanda limanda</i> mg/L LC50	1085 - 1402: 48 h <i>Daphnia magna</i> mg/L LC50

12.2. Persistence and degradability

No product level data available.

12.3. Bioaccumulative potential

No information available.

Chemical name	Log Pow
Sodium hydroxide	Not Established
Sodium sulfide	-3.5 - 3.5
Sodium tetraborate, decahydrate	Not Established

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

No information available.

Chemical name	PBT and vPvB assessment
Sodium hydroxide	-
Sodium sulfide	-
Sodium tetraborate, decahydrate	-

12.6. Other adverse effects

No information available

Chemical name	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine disrupting potential
Sodium hydroxide	Not Established	Not Established	Not Established
Sodium sulfide	Not Established	Not Established	Not Established
Sodium tetraborate, decahydrate	Not Established	Not Established	Not Established

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products	Dispose of waste product or used containers according to local regulations.
Contaminated packaging	Empty remaining contents.
Other Information	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

Section 14: TRANSPORT INFORMATION

IMDG/IMO

14.1 UN-No	3266
14.2 Proper shipping name	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (1% Sodium sulfide)
14.3 Hazard Class	8
14.4 Packing group	III

ICAO

14.1 UN-No	3266
14.2 Proper shipping name	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (1% Sodium sulfide)
14.3 Hazard Class	8
14.4 Packing group	III
14.5	
14.6	

IATA

14.1 UN-No	3266
14.2 Proper shipping name	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (1% Sodium sulfide)
14.3 Hazard Class	8
14.4 Packing group	III
14.5	
14.6	

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Chemical name	French RG number	Title
Sodium hydroxide (CAS # 1310-73-2)	-	-
Sodium sulfide (CAS # 1313-84-4)	-	-
Sodium tetraborate, decahydrate (CAS # 1303-96-4)	-	-

Germany

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

International Inventories

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

Legend:

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

DSL/NDL - 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

15.2. Chemical safety assessment

No chemical safety assessment has been carried out for this substance/mixture by the supplier.

Section 16: ANY OTHER RELEVANT INFORMATION
Key or legend to abbreviations and acronyms used in the safety data sheet**Text of R phrases mentioned in Section 3**

R35 - Causes severe burns

R50 - Very toxic to aquatic organisms

R22 - Harmful if swallowed

R24 - Toxic in contact with skin

R31 - Contact with acids liberates toxic gas

R34 - Causes burns

R61 - May cause harm to the unborn child

R60 - May impair fertility

Full text of H-Statements referred to under section 3

H360FD - May damage fertility. May damage the unborn child

H314 - Causes severe skin burns and eye damage

H302 - Harmful if swallowed

H311 - Toxic in contact with skin

H400 - Very toxic to aquatic life

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

TWA - TWA (time-weighted average)

STEL - STEL (Short Term Exposure Limit)

Ceiling - Maximum limit value

Prepared by Regulatory Affairs Department

Issuing Date May-27-2015

Revision Date Jan-21-2016

Reason for revision (M)SDS sections updated, 2, 4, 12, 16.

Recommendations on Use Laboratory chemicals Industrial (not for food or food contact use) Restricted to professional users

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006

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

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

Product identifier

Product name HARDNESS TITRANT

Other means of identification

Product Code(s) 2783

Recommended use of the chemical and restrictions on use

Recommended Use 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 Clear, colorless	Physical state liquid	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.

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.

Unknown Acute Toxicity

2.5% of the mixture consists of ingredient(s) of unknown toxicity

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. No hazards which require special first aid measures.
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 skin irritation persists, call a physician.
Inhalation	Remove to fresh air.
Ingestion	Drink plenty of water. Consult a physician if necessary.
<u>Self-protection of the first aider</u>	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. Use personal protection recommended in Section 8.
Notes to Physician	Treat symptomatically.

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	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.
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
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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.

Incompatible Products Not Applicable.

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 Protective gloves.

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	Odor	Odorless
Appearance	Clear, colorless		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	7	
Melting point / freezing point	No information available	
Boiling point / boiling range	>100 °C / >212 °F	
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.
Hazardous Reactions	None under normal processing.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	None known based on information supplied.
Incompatible materials	Not Applicable.
Hazardous decomposition products	None known.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Component Information

Information on toxicological effects

Chronic toxicity No known effect.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Unknown Aquatic Toxicity 2.5 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Persistence and degradability

No information available.

Bioaccumulation/Accumulation

No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods	Can be disposed as waste water, when in compliance with 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.

14. TRANSPORT INFORMATION

<u>DOT</u>	Not regulated
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IATA Not regulated

IMDG/IMO Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDL	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/NDL - 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

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/AHMIS

Health hazard 0

Flammability 0

Stability 0



Health Hazard	0
Fire Hazard	0
Reactivity	0

Prepared by

Issuing Date

Revision Date

Reason for revision

Disclaimer

Regulatory Affairs Department

Jun-01-2015

Jul-22-2015

New US GHS format

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