



Material Safety Data Sheet

Issuing Date 10/7/2011

Revision Number 0

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	HARDNESS REAGENT #5	Hardness Reagent # 5 #4483
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 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 effects 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 %
Sodium sulfide, nonahydrate	1313-84-4	1
Tartrate, potassium sodium	6381-59-5	1
Sodium hydroxide	1310-73-2	1-2
Sodium borate	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 (CO₂), or foam.

Explosion Data**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**

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.
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	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sodium sulfide, nonahydrate 1313-84-4	None Known	None Known	None Known
Tartrate, potassium sodium 6381-59-5	None Known	None Known	None Known
Sodium hydroxide 1310-73-2	None Known	TWA: 2 mg/m ³	IDLH: 10 mg/m ³ Ceiling: 2 mg/m ³
Sodium borate 1303-96-4	= 8 mg/m ³ STEL TWA: 2 mg/m ³	None Known	TWA: 5 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)
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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	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium sulfide, nonahydrate	208 mg/kg (Rat)	340 mg/kg (Rabbit)	None Known
Tartrate, potassium sodium	None Known	None Known	None Known
Sodium hydroxide	None Known	1350 mg/kg (Rabbit)	None Known
Sodium borate	2660 mg/kg (Rat)	2000 mg/kg (Rabbit)	None Known
Water, distilled	None Known	None Known	None Known

Chronic Toxicity

Chemical Name	ACGIH	IARC	NTP	OSHA
Sodium sulfide, nonahydrate	None Known	None Known	None Known	None Known
Tartrate, potassium sodium	None Known	None Known	None Known	None Known
Sodium hydroxide	None Known	None Known	None Known	None Known
Sodium borate	None Known	None Known	None Known	None Known
Water, distilled	None Known	None Known	None Known	None Known

Chemical Name	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Sodium sulfide, nonahydrate	None Known	None Known	None Known
Tartrate, potassium sodium	None Known	None Known	None Known
Sodium hydroxide	None Known	None Known	None Known
Sodium borate	None Known	None Known	None Known
Water, distilled	None Known	None Known	None Known

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Chemical Name	Toxicity to Algae	Toxicity to Fish	Microtox	Daphnia Magna (Water Flea)
Sodium sulfide, nonahydrate	None Known	LC50= 15 mg/L <i>Poecilia reticulata</i> 96 h	None Known	None Known
Tartrate, potassium sodium	None Known	None Known	None Known	None Known
Sodium hydroxide	None Known	LC50= 45.4 mg/L <i>Oncorhynchus mykiss</i> 96 h	None Known	None Known
Sodium borate	EC50 = 158 mg/L 96 h	LC50= 340 mg/L <i>Limanda limanda</i> 96 h	None Known	None Known
Water, distilled	None Known	None Known	None Known	None Known

Chemical Name	Log Pow
Sodium sulfide, nonahydrate	None Known
Tartrate, potassium sodium	None Known
Sodium hydroxide	None Known
Sodium borate	None Known
Water, distilled	None Known

13. DISPOSAL CONSIDERATIONS**Waste Disposal Method**

Dispose according to federal, state, and local regulations.

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Sodium sulfide, nonahydrate - 1313-84-4	None Known	None Known	None Known	None Known
Tartrate, potassium sodium - 6381-59-5	None Known	None Known	None Known	None Known
Sodium hydroxide - 1310-73-2	None Known	None Known	None Known	None Known
Sodium borate - 1303-98-4	None Known	None Known	None Known	None Known
Water, distilled - 7732-18-5	None Known	None Known	None Known	None Known

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 borate	Toxic

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**

Component	TSCA	DSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Sodium sulfide, nonahydrate 1313-84-4 (1)	TSCA	DSL	EINECS/ELINCS	ENCS	IECSC	KECL	X	X
Tartrate, potassium sodium 6381-59-5 (1)	TSCA	DSL	EINECS/ELINCS	9-530	X	KECL	X	X
Sodium hydroxide 1310-73-2 (1-2)	Present	X	X	1-410; 2-1972	X	KE-31487	X	X
Sodium borate 1303-96-4 (4)	Present	X	EINECS/ELINCS	ENCS	X	KE-03483	X	X
Water, distilled 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 sulfide, nonahydrate	1313-84-4	1	None Known
Tartrate, potassium sodium	6381-59-5	1	None Known
Sodium hydroxide	1310-73-2	1-2	None Known
Sodium borate	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

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sodium sulfide, nonahydrate 1313-84-4 (1)	None Known	None Known	None Known	None Known
Tartrate, potassium sodium 6381-59-5 (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 borate 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

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
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HARDNESS REAGENT #5

Product Code(s) 4483

Sodium sulfide, nonahydrate	1313-84-4	1	None Known	None Known	None Known	None Known
Tartrate, potassium sodium	6381-59-5	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 borate	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	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Sodium sulfide, nonahydrate	None Known	None Known
Tartrate, potassium sodium	None Known	None Known
Sodium hydroxide	1000 lb	None Known
Sodium borate	None Known	None Known
Water, distilled	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 sulfide, nonahydrate	1313-84-4	None Known
Tartrate, potassium sodium	6381-59-5	None Known
Sodium hydroxide	1310-73-2	None Known
Sodium borate	1303-96-4	None Known
Water, distilled	7732-18-5	None Known

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Sodium sulfide, nonahydrate	X	X	None Known	None Known	None Known
Tartrate, potassium sodium	None Known	None Known	None Known	None Known	None Known
Sodium hydroxide	X	X	X	None Known	X
Sodium borate	X	X	X	None Known	X
Water, distilled	None Known	None Known	None Known	None Known	None Known

International Regulations**Mexico - Grade**

Chemical Name	Carcinogen Status	Exposure Limits
Sodium sulfide, nonahydrate	None Known	None Known
Tartrate, potassium sodium	None Known	None Known
Sodium hydroxide	None Known	None Known
Sodium borate	None Known	Mexico: TWA= 5 mg/m ³
Water, distilled	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 sulfide, nonahydrate 1313-84-4 (1)	Not determined
Tartrate, potassium sodium 6381-59-5 (1)	Uncontrolled product according to WHMIS classification criteria

Sodium hydroxide 1310-73-2 (1-2)	1 % E
Sodium borate 1303-96-4 (4)	1 % D2B
Water, distilled 7732-18-5 (to 100%)	Uncontrolled product according to WHMIS classification criteria



16. OTHER INFORMATION

NFPA	HMIS	PPE	Transport Symbol						
(Bad file name)	<table><tr><td>Health Hazard</td><td>2</td></tr><tr><td>Physical Hazard</td><td>0</td></tr><tr><td>Reactivity</td><td>1</td></tr></table>	Health Hazard	2	Physical Hazard	0	Reactivity	1		
Health Hazard	2								
Physical Hazard	0								
Reactivity	1								

Prepared By Regulatory Affairs Department

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Revision Date 07-Oct-2011

Revision Note
Initial Release

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