

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****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 numbers**

(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.

Response: Immediately call a poison center or physician.

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.

Storage:

Store locked up.

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 #	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.
<u>Self-protection of the first aider</u>	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. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

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.
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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**

Harmful to aquatic life

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	Not Established	Not Established	Not Established	Not Established

7732-18-5			
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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

TDG

Not regulated

MEX

Not regulated

ICAO

Not regulated

IATA

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

IMDG/IMO

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

RID

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

ADR

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

ADN

Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA Complies
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/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

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
Issuing Date
Revision Date
Reason for revision
Disclaimer

Regulatory Affairs Department
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SDS sections updated 2 4 12 16

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