

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : Water Hardness Buffer
Product code : LC26840

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

Use of the substance/mixture : For laboratory and manufacturing use only.

1.3. Details of the supplier of the safety data sheet

LabChem Inc
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 or 011-703-527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin Irrit. 2 H315
Eye Irrit. 2A H319
Repr. 1B H360
Aquatic Acute 2 H401

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS07

GHS08

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) :
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H360 - May damage fertility or the unborn child
H401 - Toxic to aquatic life

Precautionary statements (GHS-US) :
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P264 - Wash exposed skin thoroughly after handling
P273 - Avoid release to the environment
P280 - Wear protective gloves, eye protection
P302+P352 - IF ON SKIN: Wash with plenty of soap and water
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308+P313 - IF exposed or concerned: Get medical advice/attention
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P405 - Store locked up
P501 - Dispose of contents/container to comply with local, state and federal regulations

2.3. Other hazards

Other hazards not contributing to the classification : None under normal conditions.

2.4. Unknown acute toxicity (GHS-US)

No data available

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SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

Full text of H-phrases: see section 16

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Water	(CAS No) 7732-18-5	93.25	Not classified
Sodium Tetraborate Decahydrate	(CAS No) 1303-96-4	4	Repr. 1B, H360
Sodium Potassium Tartrate, Tetrahydrate	(CAS No) 6381-59-5	1	Not classified
Sodium Sulfide, Nonahydrate	(CAS No) 1313-84-4	1	Met. Corr. 1, H290 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Skin Corr. 1B, H314 Eye Dam. 1, H318 Aquatic Acute 1, H400
Sodium Hydroxide	(CAS No) 1310-73-2	0.65	Acute Tox. 4 (Dermal), H312 Skin Corr. 1A, H314 Eye Dam. 1, H318 Aquatic Acute 3, H402
EDTA, Magnesium Disodium Salt	(CAS No) 14402-88-1	0.1	Not classified

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. IF exposed or concerned: Get medical advice/attention.
- First-aid measures after inhalation : Assure fresh air breathing. Allow the victim to rest.
- First-aid measures after skin contact : Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

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

- Symptoms/injuries : May damage fertility or the unborn child.
- Symptoms/injuries after skin contact : Causes skin irritation.
- Symptoms/injuries after eye contact : Causes serious eye irritation.

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

Obtain medical assistance.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment : Safety glasses. Gloves.
- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

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6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use.

Hygiene measures : Wash exposed skin thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : metals. Keep container closed when not in use.

Incompatible products : Strong acids. metals.

Incompatible materials : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Sodium Tetraborate Decahydrate (1303-96-4)		
USA ACGIH	ACGIH TWA (mg/m³)	2 mg/m³
USA ACGIH	ACGIH STEL (mg/m³)	6 mg/m³
Sodium Hydroxide (1310-73-2)		
USA ACGIH	ACGIH Ceiling (mg/m³)	2 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	2 mg/m³
Sodium Sulfide, Nonahydrate (1313-84-4)		
USA ACGIH	ACGIH TWA (ppm)	1 ppm
USA ACGIH	ACGIH STEL (ppm)	1 ppm

8.2. Exposure controls

Appropriate engineering controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation.

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : Wear appropriate mask.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Colour : Colourless.

Odour : characteristic.

Odour threshold : No data available

pH : No data available

Relative evaporation rate (butylacetate=1) : No data available

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Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Self ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: Soluble in water.
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Contact with acids liberates toxic gas.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. metals.

10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide. Sulfur compounds.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Sodium Tetraborate Decahydrate (1303-96-4)	
LD50 oral rat	2660 mg/kg
LD50 dermal rabbit	10000 mg/kg
Water (7732-18-5)	
LD50 oral rat	≥ 90000 mg/kg
Sodium Hydroxide (1310-73-2)	
LD50 dermal rabbit	1350 mg/kg (Rabbit; Literature,Rabbit; Literature)
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified

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Reproductive toxicity	: May damage fertility or the unborn child.
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye irritation.
Likely routes of exposure	: Skin and eye contact; Inhalation

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Toxic to aquatic life.

Sodium Tetraborate Decahydrate (1303-96-4)	
EC50 Daphnia 1	1085 mg/l
Sodium Hydroxide (1310-73-2)	
LC50 fishes 1	45.4 mg/l (96 h; Salmo gairdneri (Oncorhynchus mykiss); Solution >=50%)
EC50 Daphnia 1	40.4 mg/l (48 h; Ceriodaphnia sp.; Nominal concentration)
LC50 fish 2	189 mg/l (48 h; Leuciscus idus)
TLM fish 1	99 mg/l (48 h; Lepomis macrochirus)
TLM fish 2	125 ppm (96 h; Gambusia affinis)
Sodium Sulfide, Nonahydrate (1313-84-4)	
LC50 fishes 1	15 mg/l (96 h; Poecilia reticulata; Anhydrous form)
EC50 Daphnia 1	2.1 mg/l (48 h; Daphnia magna; Anhydrous form)
EC50 other aquatic organisms 1	0.86 mg/l (Algae; Anhydrous form)
LC50 fish 2	0.0243 mg/l (96 h; Pimephales promelas; Hydrogen sulfide)
EC50 Daphnia 2	7.1 - 12 mg/l (24 h; Daphnia magna; Anhydrous form)
TLM fish 1	61 ppm (48 h; Lepomis macrochirus; Anhydrous form)
Threshold limit other aquatic organisms 1	14 mg/l (Protozoa; Anhydrous form)
Threshold limit algae 1	8 mg/l (192 h; Microcystis aeruginosa; Anhydrous form)
Threshold limit algae 2	44 mg/l (Scenedesmus quadricauda; Anhydrous form)

12.2. Persistence and degradability

Water Hardness Buffer	
Persistence and degradability	Not established.
Sodium Potassium Tartrate, Tetrahydrate (6381-59-5)	
Persistence and degradability	Not established.
Sodium Tetraborate Decahydrate (1303-96-4)	
Persistence and degradability	Not established.
Water (7732-18-5)	
Persistence and degradability	Not established.
Sodium Hydroxide (1310-73-2)	
Persistence and degradability	Biodegradability: not applicable. No (test) data on mobility of the substance available.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
Sodium Sulfide, Nonahydrate (1313-84-4)	
Persistence and degradability	Biodegradability: not applicable. No (test) data on mobility of the substance available.
Biochemical oxygen demand (BOD)	Not applicable

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Sodium Sulfide, Nonahydrate (1313-84-4)

Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

12.3. Bioaccumulative potential

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Bioaccumulative potential	Not established.
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Sodium Potassium Tartrate, Tetrahydrate (6381-59-5)

Bioaccumulative potential	Not established.
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Sodium Tetraborate Decahydrate (1303-96-4)

Bioaccumulative potential	Not established.
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Water (7732-18-5)

Bioaccumulative potential	Not established.
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Sodium Hydroxide (1310-73-2)

Bioaccumulative potential	Bioaccumulation: not applicable.
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Sodium Sulfide, Nonahydrate (1313-84-4)

BCF fish 1	1.6
BCF other aquatic organisms 1	4.3 - 10.9 (2 h; Anhydrous form)
Bioaccumulative potential	Low potential for bioaccumulation (molecular mass ≥ 700 g/mol).

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to comply with local, state and federal regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT

No dangerous good in sense of transport regulations

Additional information

Other information : No supplementary information available.

ADR

Transport document description :

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Sodium Potassium Tartrate, Tetrahydrate (6381-59-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Sodium Tetraborate Decahydrate (1303-96-4)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

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Water (7732-18-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Sodium Hydroxide (1310-73-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

RQ (Reportable quantity, section 304 of EPA's List of Lists) :

1000 lb

SARA Section 311/312 Hazard Classes

Immediate (acute) health hazard

EDTA, Magnesium Disodium Salt (14402-88-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Sodium Sulfide, Nonahydrate (1313-84-4)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

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WHMIS Classification

Class D Division 2 Subdivision B - Toxic material causing other toxic effects
Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

Sodium Potassium Tartrate, Tetrahydrate (6381-59-5)

Listed on the Canadian DSL (Domestic Substances List) inventory.

WHMIS Classification

Uncontrolled product according to WHMIS classification criteria

Sodium Tetraborate Decahydrate (1303-96-4)

Listed on the Canadian DSL (Domestic Substances List) inventory.

WHMIS Classification

Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

Water (7732-18-5)

Listed on the Canadian DSL (Domestic Substances List) inventory.

WHMIS Classification

Uncontrolled product according to WHMIS classification criteria

Sodium Hydroxide (1310-73-2)

Listed on the Canadian DSL (Domestic Substances List) inventory.

WHMIS Classification

Class E - Corrosive Material

Sodium Sulfide, Nonahydrate (1313-84-4)

Not listed on the Canadian DSL (Domestic Substances List) inventory.

WHMIS Classification

Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects
Class E - Corrosive Material

EU-Regulations

No additional information available

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

Classification according to Directive 67/548/EEC or 1999/45/EC

Not classified

15.2.2. National regulations

Sodium Potassium Tartrate, Tetrahydrate (6381-59-5)

Not listed on the Canadian Ingredient Disclosure List

Sodium Tetraborate Decahydrate (1303-96-4)

Listed on the Canadian Ingredient Disclosure List

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Water (7732-18-5)

Not listed on the Canadian Ingredient Disclosure List

Sodium Hydroxide (1310-73-2)

Listed on the Canadian Ingredient Disclosure List

Sodium Sulfide, Nonahydrate (1313-84-4)

Not listed on the Canadian Ingredient Disclosure List

15.3. US State regulations

No additional information available

SECTION 16: Other information

Other information : None.

Full text of H-phrases: see section 16:

Acute Tox. 3 (Dermal)	Acute toxicity (dermal), Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment — AcuteHazard, Category 1
Aquatic Acute 2	Hazardous to the aquatic environment — AcuteHazard, Category 2
Aquatic Acute 3	Hazardous to the aquatic environment — AcuteHazard, Category 3
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Met. Corr. 1	Corrosive to metals, Category 1
Repr. 1B	Reproductive toxicity, Category 1B
Skin Corr. 1A	Skin corrosion/irritation, Category 1A
Skin Corr. 1B	Skin corrosion/irritation, Category 1B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
H290	May be corrosive to metals
H301	Toxic if swallowed
H311	Toxic in contact with skin
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H360	May damage fertility or the unborn child
H400	Very toxic to aquatic life
H401	Toxic to aquatic life
H402	Harmful to aquatic life

NFPA health hazard

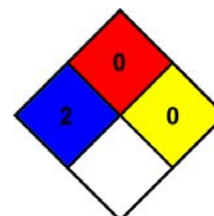
: 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard

: 0 - Materials that will not burn.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 0 Minimal Hazard

Physical : 0 Minimal Hazard

Personal Protection : G

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