

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

1.1. Product identifier

Product form : Mixture
Product name : Buffer Solution for Fluoride
Product code : LC12580

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

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) : Warning
Hazard statements (GHS-US) : H315 - Causes skin irritation
H319 - Causes serious eye irritation
Precautionary statements (GHS-US) : P264 - Wash exposed skin thoroughly after handling
P280 - Wear eye protection, protective gloves
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
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

2.3. Other hazards

Other hazards not contributing to the classification : None.

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Water	(CAS No) 7732-18-5	84.07	Not classified

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Name	Product identifier	%	GHS-US classification
Sodium Chloride	(CAS No) 7647-14-5	5.8	Not classified
Acetic Acid	(CAS No) 64-19-7	5.7	Flam. Liq. 3, H226 Skin Corr. 1B, H314 Eye Dam. 1, H318
Sodium Hydroxide	(CAS No) 1310-73-2	4.4	Acute Tox. 4 (Dermal), H312 Skin Corr. 1A, H314 Eye Dam. 1, H318 Aquatic Acute 3, H402
Sodium Citrate, Dihydrate	(CAS No) 6132-04-3	0.03	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 you feel unwell, seek medical advice (show the label where possible).
- 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 immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
- 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 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

None.

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

- Fire hazard : Not flammable.
- Explosion hazard : Not applicable.
- Reactivity : None.

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

- General measures : None.

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.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

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.

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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.
- 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 : incompatible materials. Keep container closed when not in use.
- Incompatible products : Strong oxidizers.
- 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

Acetic Acid (64-19-7)		
USA ACGIH	ACGIH TWA (ppm)	10 ppm
USA ACGIH	ACGIH STEL (ppm)	10 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	25 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	10 ppm

Sodium Hydroxide (1310-73-2)		
USA ACGIH	ACGIH Ceiling (mg/m ³)	2 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	2 mg/m ³

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.
- 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
- Appearance : Clear, colorless liquid.
- Colour : Colourless
- Odour : None.
- Odour threshold : No data available
- pH : 5 - 5.5
- Relative evaporation rate (butylacetate=1) : No data available
- Melting point : No data available
- Freezing point : No data available
- Boiling point : No data available
- Flash point : No data available
- Auto-ignition temperature : No data available
- Decomposition temperature : No data available

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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. Water: Solubility in water of component(s) of the mixture : • Acetic Acid: Complete • Sodium Hydroxide: 42 g/100ml • Sodium Citrate, Dihydrate: 72 g/100ml
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: Not applicable.
Oxidising properties	: None.
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

None.

10.2. Chemical stability

Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong oxidizers.

10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Sodium Hydroxide (1310-73-2)	
LD50 dermal rabbit	1350 mg/kg (Rabbit; Literature)
ATE US (dermal)	1350 mg/kg bodyweight

Sodium Chloride (7647-14-5)	
LD50 oral rat	3000 mg/kg
LD50 dermal rat	10000 mg/kg
ATE US (oral)	3000 mg/kg bodyweight
ATE US (dermal)	10000 mg/kg bodyweight
ATE US (dust,mist)	10500 mg/l/4h

Water (7732-18-5)	
LD50 oral rat	≥ 90000 mg/kg
ATE US (oral)	90000 mg/kg bodyweight

Sodium Citrate, Dihydrate (6132-04-3)	
LD50 oral rat	6730 mg/kg
ATE US (oral)	6730 mg/kg bodyweight

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Skin corrosion/irritation	: Causes skin irritation. pH: 5 - 5.5
Serious eye damage/irritation	: Causes serious eye irritation. pH: 5 - 5.5
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified Based on available data, the classification criteria are not met
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified Based on available data, the classification criteria are not met
Aspiration hazard	: Not classified Based on available data, the classification criteria are not met
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.

SECTION 12: Ecological information

12.1. Toxicity

Buffer Solution for Fluoride	
LC50 fishes 1	1303 mg/kg

Acetic Acid (64-19-7)	
LC50 fishes 1	75 mg/l (96 h; <i>Lepomis macrochirus</i>)
EC50 Daphnia 1	47 mg/l (24 h; <i>Daphnia magna</i> ; Not neutralized)
EC50 other aquatic organisms 1	> 5000 mg/l (5 h; Activated sludge)
LC50 fish 2	94 mg/l (96 h; <i>Oryzias latipes</i>)
EC50 Daphnia 2	95 mg/l (24 h; <i>Daphnia magna</i> ; Static system)
TLM fish 1	100 ppm (96 h; <i>Carassius auratus</i>)
Threshold limit algae 1	90 mg/l (192 h; <i>Microcystis aeruginosa</i> ; Neutralized)
Threshold limit algae 2	4000 mg/l (192 h; <i>Scenedesmus quadricauda</i> ; Neutralized)

Sodium Hydroxide (1310-73-2)	
LC50 fishes 1	45.4 mg/l (96 h; <i>Salmo gairdneri</i> (<i>Oncorhynchus mykiss</i>); Solution >=50%)
EC50 Daphnia 1	40.4 mg/l (48 h; <i>Ceriodaphnia</i> sp.; Nominal concentration)
LC50 fish 2	189 mg/l (48 h; <i>Leuciscus idus</i>)
TLM fish 1	99 mg/l (48 h; <i>Lepomis macrochirus</i>)
TLM fish 2	125 ppm (96 h; <i>Gambusia affinis</i>)

Sodium Chloride (7647-14-5)	
LC50 fishes 1	7650 mg/l
EC50 Daphnia 1	1000 mg/l

Sodium Citrate, Dihydrate (6132-04-3)	
EC50 Daphnia 1	655 - 825.9 mg/l

12.2. Persistence and degradability

Buffer Solution for Fluoride	
Persistence and degradability	Not established.

Acetic Acid (64-19-7)	
Persistence and degradability	Readily biodegradable in water. Inherently biodegradable. Biodegradable in the soil.
Biochemical oxygen demand (BOD)	0.6 - 0.74 g O ₂ /g substance
Chemical oxygen demand (COD)	1.03 g O ₂ /g substance

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Acetic Acid (64-19-7)	
ThOD	1.07 g O ₂ /g substance
BOD (% of ThOD)	0.56 - 0.69 % ThOD

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 Chloride (7647-14-5)	
Persistence and degradability	Not established.

Water (7732-18-5)	
Persistence and degradability	Not established.

Sodium Citrate, Dihydrate (6132-04-3)	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Buffer Solution for Fluoride	
Bioaccumulative potential	Not established.

Acetic Acid (64-19-7)	
Log Pow	-0.31 (Experimental value)
Bioaccumulative potential	Bioaccumulation: not applicable.

Sodium Hydroxide (1310-73-2)	
Bioaccumulative potential	Bioaccumulation: not applicable.

Sodium Chloride (7647-14-5)	
Bioaccumulative potential	Not established.

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

Sodium Citrate, Dihydrate (6132-04-3)	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

Acetic Acid (64-19-7)	
Surface tension	0.028 N/m (20 °C)

12.5. Other adverse effects

- Effect on ozone layer : No additional information available
- Effect on the global warming : No known ecological damage caused by this product.
- 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.
- Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

- In accordance with DOT
- Not regulated for transport

Additional information

- Other information : No supplementary information available.

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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

Buffer Solution for Fluoride	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Acetic Acid (64-19-7)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Not listed on the United States SARA Section 313	
RQ (Reportable quantity, section 304 of EPA's List of Lists) :	5000 lb
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

15.2. International regulations

CANADA

Buffer Solution for Fluoride	
WHMIS Classification	Class D Division 2 Subdivision B - Toxic material causing other toxic effects
Acetic Acid (64-19-7)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class B Division 3 - Combustible Liquid Class E - Corrosive Material
Sodium Hydroxide (1310-73-2)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class E - Corrosive Material
Sodium Chloride (7647-14-5)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Water (7732-18-5)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Sodium Citrate, Dihydrate (6132-04-3)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria

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

Acetic Acid (64-19-7)	
Listed on the Canadian IDL (Ingredient Disclosure List)	

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15.3. US State regulations

SECTION 16: Other information

Indication of changes : Revision - See : *

Other information : None.

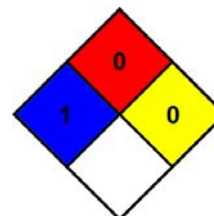
Full text of H-phrases: see section 16:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Aquatic Acute 3	Hazardous to the aquatic environment — Acute Hazard, Category 3
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Flam. Liq. 3	Flammable liquids, Category 3
Skin Corr. 1A	Skin corrosion/irritation, Category 1A
Skin Corr. 1B	Skin corrosion/irritation, Category 1B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
H226	Flammable liquid and vapour
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
H402	Harmful to aquatic life

NFPA health hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment 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 : 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability : 0 Minimal Hazard

Physical : 0 Minimal Hazard

Personal Protection : B

SDS US (GHS HazCom 2012)

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