

### SECTION 1: Identification

#### 1.1. Identification

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  
Zellienople, PA 16063 - USA  
T 412-826-5230 - F 724-473-0647  
[info@labchem.com](mailto:info@labchem.com) - [www.labchem.com](http://www.labchem.com)

#### 1.4. Emergency telephone number

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

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS-US classification

Skin corrosion/irritation Category 2 H315  
Serious eye damage/eye irritation Category 2A H319  
Full text of H statements : see section 16

#### 2.2. Label elements

##### GHS-US labeling

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+P364 - Take off contaminated clothing and wash it before reuse

#### 2.3. Other hazards

Other hazards not contributing to the classification : None.

#### 2.4. Unknown acute toxicity (GHS US)

Not applicable

### SECTION 3: Composition/Information on ingredients

#### 3.1. Substance

Not applicable

#### 3.2. Mixture

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| Name                      | Product identifier | %     | GHS-US classification                                                                           |
|---------------------------|--------------------|-------|-------------------------------------------------------------------------------------------------|
| Water                     | (CAS No) 7732-18-5 | 84.07 | Not classified                                                                                  |
| Sodium Chloride           | (CAS No) 7647-14-5 | 5.8   | Not classified                                                                                  |
| Acetic Acid               | (CAS No) 64-19-7   | 5.7   | Flam. Liq. 3, H226<br>Skin Corr. 1B, H314<br>Eye Dam. 1, H318<br>Aquatic Acute 3, H402          |
| Sodium Hydroxide          | (CAS No) 1310-73-2 | 4.4   | Acute Tox. 4 (Dermal), H312<br>Skin Corr. 1A, H314<br>Eye Dam. 1, H318<br>Aquatic Acute 3, H402 |
| Sodium Citrate, Dihydrate | (CAS No) 6132-04-3 | 0.03  | Not classified                                                                                  |

Full text of hazard classes and H-statements : see section 16

### 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 : Allow victim to breathe fresh air. 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.

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### 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 vapor.

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.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

| Acetic Acid (64-19-7)                 |                                          |                                                                                          |
|---------------------------------------|------------------------------------------|------------------------------------------------------------------------------------------|
| ACGIH                                 | ACGIH TWA (ppm)                          | 10 ppm (Acetic acid; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value) |
| ACGIH                                 | ACGIH STEL (ppm)                         | 15 ppm (Acetic acid; USA; Short time value; TLV - Adopted Value)                         |
| OSHA                                  | OSHA PEL (TWA) (mg/m <sup>3</sup> )      | 25 mg/m <sup>3</sup>                                                                     |
| OSHA                                  | OSHA PEL (TWA) (ppm)                     | 10 ppm                                                                                   |
| IDLH                                  | US IDLH (ppm)                            | 50 ppm                                                                                   |
| NIOSH                                 | NIOSH REL (TWA) (mg/m <sup>3</sup> )     | 25 mg/m <sup>3</sup>                                                                     |
| NIOSH                                 | NIOSH REL (TWA) (ppm)                    | 10 ppm                                                                                   |
| NIOSH                                 | NIOSH REL (STEL) (mg/m <sup>3</sup> )    | 37 mg/m <sup>3</sup>                                                                     |
| NIOSH                                 | NIOSH REL (STEL) (ppm)                   | 15 ppm                                                                                   |
| Sodium Hydroxide (1310-73-2)          |                                          |                                                                                          |
| ACGIH                                 | ACGIH Ceiling (mg/m <sup>3</sup> )       | 2 mg/m <sup>3</sup> (Sodium hydroxide; USA; Momentary value; TLV - Adopted Value)        |
| OSHA                                  | OSHA PEL (TWA) (mg/m <sup>3</sup> )      | 2 mg/m <sup>3</sup>                                                                      |
| IDLH                                  | US IDLH (mg/m <sup>3</sup> )             | 10 mg/m <sup>3</sup>                                                                     |
| NIOSH                                 | NIOSH REL (ceiling) (mg/m <sup>3</sup> ) | 2 mg/m <sup>3</sup>                                                                      |
| Sodium Chloride (7647-14-5)           |                                          |                                                                                          |
| Not applicable                        |                                          |                                                                                          |
| Water (7732-18-5)                     |                                          |                                                                                          |
| Not applicable                        |                                          |                                                                                          |
| Sodium Citrate, Dihydrate (6132-04-3) |                                          |                                                                                          |
| Not applicable                        |                                          |                                                                                          |

### 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.

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Personal protective equipment

: Safety glasses. Gloves.



Hand protection

: Wear protective gloves.

Eye protection

: Chemical goggles or safety glasses.

Skin and body protection

: Wear suitable protective clothing.

Respiratory protection

: Respiratory protection not required in normal conditions.

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. |
| Color                                       | : Colorless                |
| Odor                                        | : None.                    |
| Odor threshold                              | : No data available        |
| pH                                          | : 5 - 5.5                  |
| Melting point                               | : No data available        |
| Freezing point                              | : No data available        |
| Boiling point                               | : No data available        |
| Flash point                                 | : No data available        |
| Relative evaporation rate (butyl acetate=1) | : No data available        |
| Flammability (solid, gas)                   | : Non flammable.           |
| Vapor pressure                              | : No data available        |
| Relative vapor density at 20 °C             | : No data available        |
| Relative density                            | : No data available        |
| Solubility                                  | : Soluble in water.        |
| Log Pow                                     | : No data available        |
| Auto-ignition temperature                   | : No data available        |
| Decomposition temperature                   | : No data available        |
| Viscosity, kinematic                        | : No data available        |
| Viscosity, dynamic                          | : No data available        |
| Explosion limits                            | : No data available        |
| Explosive properties                        | : Not applicable.          |
| Oxidizing properties                        | : None.                    |

### 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.

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### 10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Likely routes of exposure : Skin and eye contact

Acute toxicity : Not classified

| Acetic Acid (64-19-7) |                                                  |
|-----------------------|--------------------------------------------------|
| LD50 oral rat         | 3310 mg/kg body weight (Rat; Other; Read-across) |
| ATE US (oral)         | 3310.000 mg/kg body weight                       |

| Sodium Hydroxide (1310-73-2) |                            |
|------------------------------|----------------------------|
| ATE US (dermal)              | 1350.000 mg/kg body weight |

| Sodium Chloride (7647-14-5) |                             |
|-----------------------------|-----------------------------|
| LD50 oral rat               | 3000 mg/kg                  |
| LD50 dermal rat             | 10000 mg/kg                 |
| ATE US (oral)               | 3000.000 mg/kg body weight  |
| ATE US (dermal)             | 10000.000 mg/kg body weight |
| ATE US (dust, mist)         | 10500.000 mg/l/4h           |

| Water (7732-18-5) |                             |
|-------------------|-----------------------------|
| LD50 oral rat     | ≥ 90000 mg/kg               |
| ATE US (oral)     | 90000.000 mg/kg body weight |

| Sodium Citrate, Dihydrate (6132-04-3) |                            |
|---------------------------------------|----------------------------|
| LD50 oral rat                         | 6730 mg/kg                 |
| ATE US (oral)                         | 6730.000 mg/kg body weight |

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 sensitization : 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

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.

## SECTION 12: Ecological information

### 12.1. Toxicity

| Buffer Solution for Fluoride |            |
|------------------------------|------------|
| LC50 fish 1                  | 1303 mg/kg |

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|                                              |                                                                                                |
|----------------------------------------------|------------------------------------------------------------------------------------------------|
| <b>Sodium Hydroxide (1310-73-2)</b>          |                                                                                                |
| LC50 fish 1                                  | 45.4 mg/l (LC50; Other; 96 h; Salmo gairdneri; Static system; Fresh water; Experimental value) |
| <b>Sodium Chloride (7647-14-5)</b>           |                                                                                                |
| LC50 fish 1                                  | 7650 mg/l                                                                                      |
| EC50 Daphnia 1                               | 1000 mg/l                                                                                      |
| <b>Sodium Citrate, Dihydrate (6132-04-3)</b> |                                                                                                |
| EC50 Daphnia 1                               | 655 - 825.9 mg/l                                                                               |

### 12.2. Persistence and degradability

|                                              |                                                                                        |
|----------------------------------------------|----------------------------------------------------------------------------------------|
| <b>Buffer Solution for Fluoride</b>          |                                                                                        |
| Persistence and degradability                | Not established.                                                                       |
| <b>Acetic Acid (64-19-7)</b>                 |                                                                                        |
| Persistence and degradability                | Readily biodegradable in water. Biodegradable in the soil. Highly mobile in soil.      |
| Biochemical oxygen demand (BOD)              | 0.6 - 0.74 g O <sub>2</sub> /g substance                                               |
| Chemical oxygen demand (COD)                 | 1.03 g O <sub>2</sub> /g substance                                                     |
| ThOD                                         | 1.07 g O <sub>2</sub> /g substance                                                     |
| <b>Sodium Hydroxide (1310-73-2)</b>          |                                                                                        |
| 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                                                                         |
| <b>Sodium Chloride (7647-14-5)</b>           |                                                                                        |
| Persistence and degradability                | Not established.                                                                       |
| <b>Water (7732-18-5)</b>                     |                                                                                        |
| Persistence and degradability                | Not established.                                                                       |
| <b>Sodium Citrate, Dihydrate (6132-04-3)</b> |                                                                                        |
| Persistence and degradability                | Not established.                                                                       |

### 12.3. Bioaccumulative potential

|                                              |                                                  |
|----------------------------------------------|--------------------------------------------------|
| <b>Buffer Solution for Fluoride</b>          |                                                  |
| Bioaccumulative potential                    | Not established.                                 |
| <b>Acetic Acid (64-19-7)</b>                 |                                                  |
| BCF fish 1                                   | 3.16 (BCF; Pisces)                               |
| Log Pow                                      | -0.17 (Experimental value; 25 °C)                |
| Bioaccumulative potential                    | Low potential for bioaccumulation (Log Kow < 4). |
| <b>Sodium Hydroxide (1310-73-2)</b>          |                                                  |
| Bioaccumulative potential                    | No bioaccumulation data available.               |
| <b>Sodium Chloride (7647-14-5)</b>           |                                                  |
| Bioaccumulative potential                    | Not established.                                 |
| <b>Water (7732-18-5)</b>                     |                                                  |
| Bioaccumulative potential                    | Not established.                                 |
| <b>Sodium Citrate, Dihydrate (6132-04-3)</b> |                                                  |
| Bioaccumulative potential                    | Not established.                                 |

### 12.4. Mobility in soil

|                              |                                                               |
|------------------------------|---------------------------------------------------------------|
| <b>Acetic Acid (64-19-7)</b> |                                                               |
| Surface tension              | 0.028 N/m (20 °C)                                             |
| Log Koc                      | log Koc,0.06; QSAR                                            |
| Ecology - soil               | May be harmful to plant growth, blooming and fruit formation. |

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### 12.5. Other adverse effects

|                              |                                       |
|------------------------------|---------------------------------------|
| Effect on the global warming | : No known effects from this product. |
| GWPmix comment               | : No known effects from 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

### Department of Transportation (DOT)

In accordance with DOT

Not regulated

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### Buffer Solution for Fluoride

|                                     |                                 |
|-------------------------------------|---------------------------------|
| SARA Section 311/312 Hazard Classes | Immediate (acute) health hazard |
|-------------------------------------|---------------------------------|

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

#### Acetic Acid (64-19-7)

|                                                              |         |
|--------------------------------------------------------------|---------|
| RQ (Reportable quantity, section 304 of EPA's List of Lists) | 5000 lb |
|--------------------------------------------------------------|---------|

#### Sodium Hydroxide (1310-73-2)

|                                                              |                                 |
|--------------------------------------------------------------|---------------------------------|
| 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<br>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)

|                      |                                                                 |
|----------------------|-----------------------------------------------------------------|
| WHMIS Classification | Uncontrolled product according to WHMIS classification criteria |
|----------------------|-----------------------------------------------------------------|

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### 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

### National regulations

#### Acetic Acid (64-19-7)

Listed on the Canadian IDL (Ingredient Disclosure List)

#### Sodium Chloride (7647-14-5)

Not listed on the Canadian IDL (Ingredient Disclosure List)

#### Sodium Citrate, Dihydrate (6132-04-3)

Not listed on the Canadian IDL (Ingredient Disclosure List)

### 15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

## SECTION 16: Other information

Revision date : 12/20/2016

Other information : None.

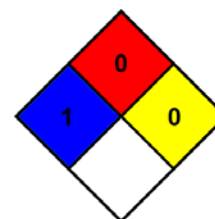
Full text of H-phrases: see section 16:

|      |                                         |
|------|-----------------------------------------|
| H226 | Flammable liquid and vapor              |
| 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 - Materials that will not burn

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal protection : B

B - Safety glasses, Gloves

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