

## SAFETY DATA SHEET

Creation Date 01-Feb-2010

Revision Date 18-Jan-2018

Revision Number 3

### 1. Identification

**Product Name** Buffer Solution, pH 8.00 (Certified)  
**Cat No. :** SB112-1; SB112-20; SB112-500; NC0682576  
**Synonyms** No information available  
**Recommended Use** Laboratory chemicals.  
**Uses advised against** Not for food, drug, pesticide or biocidal product use

#### Details of the supplier of the safety data sheet

##### Company

Fisher Scientific  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

##### **Emergency Telephone Number**

CHEMTREC®, Inside the USA: 800-424-9300  
CHEMTREC®, Outside the USA: 001-703-527-3887

### 2. Hazard(s) identification

#### **Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|                                   |            |
|-----------------------------------|------------|
| Skin Corrosion/irritation         | Category 2 |
| Serious Eye Damage/Eye Irritation | Category 2 |

#### Label Elements

##### **Signal Word**

Warning

##### **Hazard Statements**

Causes skin irritation  
Causes serious eye irritation



##### **Precautionary Statements**

Prevention

Wear protective gloves/protective clothing/eye protection/face protection

**Skin**

IF ON SKIN: Wash with plenty of soap and water

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

**Hazards not otherwise classified (HNOC)**

None identified

### 3. Composition/Information on Ingredients

| Component            | CAS-No    | Weight % |
|----------------------|-----------|----------|
| Water                | 7732-18-5 | > 97     |
| Orthophosphoric acid | 7664-38-2 | < 1.5    |
| Potassium hydroxide  | 1310-58-3 | < 1.0    |
| Sodium hydroxide     | 1310-73-2 | < 0.5    |

### 4. First-aid measures

|  |   |
|--|---|
| <b>Eye Contact</b>                         | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention. |
| <b>Skin Contact</b>                        | Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.     |
| <b>Inhalation</b>                          | Move to fresh air. If breathing is difficult, give oxygen. Get medical attention if symptoms occur.             |
| <b>Ingestion</b>                           | Do not induce vomiting. Obtain medical attention.   |
| <b>Most important symptoms and effects</b> | No information available.   |
| <b>Notes to Physician</b>                  | Treat symptomatically   |

### 5. Fire-fighting measures

|   |   |
|---|---|
| <b>Suitable Extinguishing Media</b>     | Substance is nonflammable; use agent most appropriate to extinguish surrounding fire. |
| <b>Unsuitable Extinguishing Media</b>   | No information available  |
| <b>Flash Point</b>                      | Not applicable  |
| <b>Method -</b>                         | No information available  |
| <b>Autoignition Temperature</b>         | No information available  |
| <b>Explosion Limits</b>                 |   |
| <b>Upper</b>                            | No data available   |
| <b>Lower</b>                            | No data available   |
| <b>Sensitivity to Mechanical Impact</b> | No information available  |
| <b>Sensitivity to Static Discharge</b>  | No information available  |

**Specific Hazards Arising from the Chemical**

Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.

**Hazardous Combustion Products**

None known based on information supplied

**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.

**NFPA**Health  
1Flammability  
0Instability  
0Physical hazards  
N/A**6. Accidental release measures****Personal Precautions**

Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

**Environmental Precautions**

Avoid release to the environment. See Section 12 for additional ecological information.

**Methods for Containment and Clean Up**

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

**7. Handling and storage****Handling**

Wear personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Do not breathe vapors or spray mist. Do not ingest.

**Storage**

Keep containers tightly closed in a dry, cool and well-ventilated place.

**8. Exposure controls / personal protection****Exposure Guidelines**

| Component            | ACGIH TLV   | OSHA PEL  | NIOSH IDLH  | Mexico OEL (TWA)                                      |
|----------------------|---|---|---|---|
| Orthophosphoric acid | TWA: 1 mg/m <sup>3</sup><br>STEL: 3 mg/m <sup>3</sup> | (Vacated) TWA: 1 mg/m <sup>3</sup><br>(Vacated) STEL: 3 mg/m <sup>3</sup><br>TWA: 1 mg/m <sup>3</sup> | IDLH: 1000 mg/m <sup>3</sup><br>TWA: 1 mg/m <sup>3</sup><br>STEL: 3 mg/m <sup>3</sup> | TWA: 1 mg/m <sup>3</sup><br>STEL: 3 mg/m <sup>3</sup> |
| Potassium hydroxide  | Ceiling: 2 mg/m <sup>3</sup>                          | (Vacated) Ceiling: 2 mg/m <sup>3</sup>  | Ceiling: 2 mg/m <sup>3</sup>  |   |
| Sodium hydroxide     | Ceiling: 2 mg/m <sup>3</sup>                          | (Vacated) Ceiling: 2 mg/m <sup>3</sup><br>TWA: 2 mg/m <sup>3</sup>                                    | IDLH: 10 mg/m <sup>3</sup><br>Ceiling: 2 mg/m <sup>3</sup>                            | Ceiling: 2 mg/m <sup>3</sup>                          |

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

**Engineering Measures**

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

**Personal Protective Equipment****Eye/face Protection**

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin and body protection**

Wear appropriate protective gloves and clothing to prevent skin exposure.

**Respiratory Protection**

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**9. Physical and chemical properties**Physical State  
Appearance  
OdorLiquid  
No information available  
Odorless

|  |                          |
|--|--------------------------|
| Odor Threshold                         | No information available |
| pH                                     | 8.0 @ 25°C               |
| Melting Point/Range                    | No data available        |
| Boiling Point/Range                    | No information available |
| Flash Point                            | Not applicable           |
| Evaporation Rate                       | No information available |
| Flammability (solid,gas)               | No information available |
| Flammability or explosive limits       |                          |
| Upper                                  | No data available        |
| Lower                                  | No data available        |
| Vapor Pressure                         | No information available |
| Vapor Density                          | No information available |
| Specific Gravity                       | No information available |
| Solubility                             | No information available |
| Partition coefficient; n-octanol/water | No data available        |
| Autoignition Temperature               | No information available |
| Decomposition Temperature              | No information available |
| Viscosity                              | No information available |

### 10. Stability and reactivity

|   |  |
|---|--|
| <b>Reactive Hazard</b>                  | None known, based on information available |
| <b>Stability</b>                        | Stable under normal conditions.            |
| <b>Conditions to Avoid</b>              | Excess heat.                               |
| <b>Incompatible Materials</b>           | None known                                 |
| <b>Hazardous Decomposition Products</b> | None known based on information supplied   |
| <b>Hazardous Polymerization</b>         | Hazardous polymerization does not occur.   |
| <b>Hazardous Reactions</b>              | None under normal processing.              |

### 11. Toxicological information

**Acute Toxicity**

**Product Information** No acute toxicity information is available for this product

**Component Information**

| Component            | LD50 Oral                | LD50 Dermal                  | LC50 Inhalation                   |
|----------------------|--------------------------|------------------------------|-----------------------------------|
| Water                | -                        | Not listed                   | Not listed                        |
| Orthophosphoric acid | 2600 mg/kg (Rat)         | LD50 = 2740 mg/kg ( Rabbit ) | 850 mg/m <sup>3</sup> ( Rat ) 1 h |
| Potassium hydroxide  | LD50 = 284 mg/kg ( Rat ) | Not listed                   | Not listed                        |
| Sodium hydroxide     | Not listed               | LD50 = 1350 mg/kg ( Rabbit ) | Not listed                        |

**Toxicologically Synergistic Products** No information available

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

|                        |  |
|------------------------|--|
| <b>Irritation</b>      | Irritating to eyes and skin  |
| <b>Sensitization</b>   | No information available   |
| <b>Carcinogenicity</b> | The table below indicates whether each agency has listed any ingredient as a carcinogen. |

| Component | CAS-No    | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|-----------|-----------|------------|------------|------------|------------|------------|
| Water     | 7732-18-5 | Not listed | Not listed | Not listed | Not listed | Not listed |

|                      |           |            |            |            |            |            |
|----------------------|-----------|------------|------------|------------|------------|------------|
| Orthophosphoric acid | 7664-38-2 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Potassium hydroxide  | 1310-58-3 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Sodium hydroxide     | 1310-73-2 | Not listed | Not listed | Not listed | Not listed | Not listed |

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** None known

**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects, both acute and delayed** No information available

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

## 12. Ecological information

### Ecotoxicity

Do not empty into drains.

| Component            | Freshwater Algae | Freshwater Fish                                     | Microtox   | Water Flea             |
|----------------------|------------------|---|------------|------------------------|
| Orthophosphoric acid | Not listed       | 98 - 106 mg/L LC50 96 h                             | Not listed | > 100 mg/L EC50 = 48 h |
| Potassium hydroxide  | Not listed       | LC50: = 80 mg/L, 96h static (Gambusia affinis)      | Not listed | Not listed             |
| Sodium hydroxide     | -                | LC50: = 45.4 mg/L, 96h static (Oncorhynchus mykiss) | -          | -                      |

**Persistence and Degradability** No information available

**Bioaccumulation/ Accumulation** No information available.

**Mobility** .

| Component           | log Pow |
|---------------------|---------|
| Potassium hydroxide | 0.83    |

## 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. Transport information

**DOT** Not regulated

**TDG** Not regulated

**IATA** Not regulated

**IMDG/IMO** Not regulated

## 15. Regulatory information

**International Inventories**

| Component            | TSCA | DSL | NDSL | EINECS    | ELINCS | NLP | PICCS | ENCS | AICS | IECSC | KECL |
|----------------------|------|-----|------|-----------|--------|-----|-------|------|------|-------|------|
| Water                | X    | X   | -    | 231-791-2 | -      |     | X     | -    | X    | X     | X    |
| Orthophosphoric acid | X    | X   | -    | 231-633-2 | -      |     | X     | X    | X    | X     | X    |
| Potassium hydroxide  | X    | X   | -    | 215-181-3 | -      |     | X     | X    | X    | X     | X    |
| Sodium hydroxide     | X    | X   | -    | 215-185-5 | -      |     | X     | X    | X    | X     | X    |

**Legend:**

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

**U.S. Federal Regulations**

TSCA 12(b) Not applicable

SARA 313 Not applicable

SARA 311/312 Hazard Categories See section 2 for more information

**CWA (Clean Water Act)**

| Component            | CWA - Hazardous Substances | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants |
|----------------------|----------------------------|-----------------------------|------------------------|---------------------------|
| Orthophosphoric acid | X                          | 5000 lb                     | -                      | -                         |
| Potassium hydroxide  | X                          | 1000 lb                     | -                      | -                         |
| Sodium hydroxide     | X                          | 1000 lb                     | -                      | -                         |

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration  
Not applicable

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)

| Component            | Hazardous Substances RQs | CERCLA EHS RQs |
|----------------------|--------------------------|----------------|
| Orthophosphoric acid | 5000 lb                  | -              |
| Potassium hydroxide  | 1000 lb                  | -              |
| Sodium hydroxide     | 1000 lb                  | -              |

California Proposition 65 This product does not contain any Proposition 65 chemicals

**U.S. State Right-to-Know Regulations**

| Component            | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|----------------------|---------------|------------|--------------|----------|--------------|
| Water                | -             | -          | X            | -        | -            |
| Orthophosphoric acid | X             | X          | X            | -        | X            |
| Potassium hydroxide  | X             | X          | X            | -        | X            |
| Sodium hydroxide     | X             | X          | X            | -        | X            |

**U.S. Department of Transportation**

Reportable Quantity (RQ): Y  
DOT Marine Pollutant N  
DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security**

This product does not contain any DHS chemicals.

**Other International Regulations**

Mexico - Grade No information available

**16. Other information**

**Prepared By** Regulatory Affairs  
Thermo Fisher Scientific  
Email: EMSDS.RA@thermofisher.com

**Creation Date** 01-Feb-2010  
**Revision Date** 18-Jan-2018  
**Print Date** 18-Jan-2018  
**Revision Summary** This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

**Disclaimer**

The information provided in this Safety Data Sheet 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text

**End of SDS**