



## SAFETY DATA SHEET

Creation Date 15-Dec-2009

Revision Date 20-Apr-2014

Revision Number 1

### 1. Identification

**Product Name** Buffer Solution, pH 2.00 (Certified)

**Cat No. :** SB96-1; SB96-20; SB96-500

**Synonyms** None.

**Recommended Use** Laboratory chemicals

**Uses advised against** No Information available

#### 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 not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Based on available data, the classification criteria are not met

#### Label Elements

None required

#### Hazards not otherwise classified (HNOC)

None identified

#### Other hazards

WARNING! This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

WARNING! This product contains a chemical known in the State of California to cause cancer.

### 3. Composition / Information on ingredients

#### Haz/Non-haz

| Component | CAS-No    | Weight % |
|-----------|-----------|----------|
| Water     | 7732-18-5 | 99.43    |

### 3. Composition / Information on ingredients

|                    |           |      |
|--------------------|-----------|------|
| Potassium chloride | 7447-40-7 | 0.4  |
| Hydrochloric acid  | 7647-01-0 | 0.1  |
| Formaldehyde       | 50-00-0   | 0.05 |
| Methyl alcohol     | 67-56-1   | 0.02 |

### 4. First-aid measures

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

### 5. Fire-fighting measures

|   |                           |
|---|---------------------------|
| <b>Unsuitable Extinguishing Media</b>   | No information available. |
| <b>Flash Point</b>                      | No information available. |
| <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

Thermal decomposition can lead to release of irritating gases and vapors.

**Hazardous Combustion Products** Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>).

#### 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**  
1

**Flammability**  
0

**Instability**  
0

**Physical hazards**  
N/A

### 6. Accidental release measures

|                                  |   |
|----------------------------------|---|
| <b>Personal Precautions</b>      | Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. |
| <b>Environmental Precautions</b> | Should not be released into 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.

**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   |
|-------------------|---------------------------------------|--|--|
| Hydrochloric acid | Ceiling: 2 ppm                        | Ceiling: 5 ppm<br>Ceiling: 7 mg/m <sup>3</sup><br>(Vacated) Ceiling: 5 ppm<br>(Vacated) Ceiling: 7 mg/m <sup>3</sup>   | IDLH: 50 ppm<br>Ceiling: 5 ppm<br>Ceiling: 7 mg/m <sup>3</sup>   |
| Formaldehyde      | Ceiling: 0.3 ppm                      | (Vacated) TWA: 3 ppm<br>(Vacated) STEL: 10 ppm<br>(Vacated) Ceiling: 5 ppm<br>TWA: 0.75 ppm<br>STEL: 2 ppm   | IDLH: 20 ppm<br>TWA: 0.016 ppm<br>Ceiling: 0.1 ppm   |
| Methyl alcohol    | TWA: 200 ppm<br>STEL: 250 ppm<br>Skin | (Vacated) TWA: 200 ppm<br>(Vacated) TWA: 260 mg/m <sup>3</sup><br>(Vacated) STEL: 250 ppm<br>(Vacated) STEL: 325 mg/m <sup>3</sup><br>Skin<br>TWA: 200 ppm<br>TWA: 260 mg/m <sup>3</sup> | IDLH: 6000 ppm<br>TWA: 200 ppm<br>TWA: 260 mg/m <sup>3</sup><br>STEL: 250 ppm<br>STEL: 325 mg/m <sup>3</sup> |

| Component         | Quebec   | Mexico OEL (TWA)   | Ontario TWAEV                         |
|-------------------|--|--|---------------------------------------|
| Hydrochloric acid | Ceiling: 5 ppm<br>Ceiling: 7.5 mg/m <sup>3</sup>   | Ceiling: 5 ppm<br>Ceiling: 7 mg/m <sup>3</sup>   | CEV: 2 ppm                            |
| Formaldehyde      | Ceiling: 2 ppm<br>Ceiling: 3 mg/m <sup>3</sup>   | Ceiling: 2 ppm<br>Ceiling: 3 mg/m <sup>3</sup>   | STEL: 1.0 ppm<br>CEV: 1.5 ppm         |
| Methyl alcohol    | TWA: 200 ppm<br>TWA: 262 mg/m <sup>3</sup><br>STEL: 250 ppm<br>STEL: 328 mg/m <sup>3</sup><br>Skin | TWA: 200 ppm<br>TWA: 260 mg/m <sup>3</sup><br>STEL: 250 ppm<br>STEL: 310 mg/m <sup>3</sup> | TWA: 200 ppm<br>STEL: 250 ppm<br>Skin |

### 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**

|   |                           |
|---|---------------------------|
| <b>Physical State</b>                         | Liquid                    |
| <b>Appearance</b>                             | Clear                     |
| <b>Odor</b>                                   | Odorless                  |
| <b>Odor Threshold</b>                         | No information available. |
| <b>pH</b>                                     | 2.00                      |
| <b>Melting Point/Range</b>                    | 0°C / 32°F                |
| <b>Boiling Point/Range</b>                    | 100°C / 212°F             |
| <b>Flash Point</b>                            | No information available. |
| <b>Evaporation Rate</b>                       | 1.0                       |
| <b>Flammability (solid,gas)</b>               | No information available  |
| <b>Flammability or explosive limits</b>       |                           |
| <b>Upper</b>                                  | No data available         |
| <b>Lower</b>                                  | No data available         |
| <b>Vapor Pressure</b>                         | No information available. |
| <b>Vapor Density</b>                          | 0.7                       |
| <b>Relative Density</b>                       | 1.0                       |
| <b>Solubility</b>                             | Soluble in water          |
| <b>Partition coefficient; n-octanol/water</b> | No data available         |
| <b>Autoignition Temperature</b>               | No information available. |
| <b>Decomposition temperature</b>              | No information available. |
| <b>Viscosity</b>                              | 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> | Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ) |
| <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                                     |
| Potassium chloride | 2600 mg/kg ( Rat ) | Not listed             | Not listed                                     |
| Hydrochloric acid  | 700 mg/kg ( Rat )  | 5010 mg/kg ( Rabbit )  | 3124 ppm ( Rat ) 1 h                           |
| Formaldehyde       | 500 mg/kg ( Rat )  | 270 mg/kg ( Rabbit )   | 0.578 mg/L ( Rat ) 4 h                         |
| Methyl alcohol     | 5628 mg/kg ( Rat ) | 15800 mg/kg ( Rabbit ) | 64000 ppm ( Rat ) 4 h<br>83.2 mg/L ( Rat ) 4 h |

**Toxicologically Synergistic Products** No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure****Irritation** No information available.**Sensitization** No information available.**Carcinogenicity** 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 |
| Potassium chloride | 7447-40-7 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Hydrochloric acid  | 7647-01-0 | Group 3    | Not listed | Not listed | Not listed | Not listed |
| Formaldehyde       | 50-00-0   | Group 1    | Known      | A2         | X          | A2         |
| Methyl alcohol     | 67-56-1   | Not listed | Not listed | Not listed | Not listed | Not listed |

**IARC: (International Agency for Research on Cancer)***IARC: (International Agency for Research on Cancer)**Group 1 - Carcinogenic to Humans**Group 2A - Probably Carcinogenic to Humans**Group 2B - Possibly Carcinogenic to Humans***NTP: (National Toxicity Program)***NTP: (National Toxicity Program)**Known - Known Carcinogen**Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen***ACGIH: (American Conference of Governmental Industrial Hygienists)***A1 - Known Human Carcinogen**A2 - Suspected Human Carcinogen**A3 - Animal Carcinogen**ACGIH: (American Conference of Governmental Industrial Hygienists)***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**

| Component          | Freshwater Algae    | Freshwater Fish                                  | Microtox   | Water Flea                              |
|--------------------|---------------------|--|------------|---|
| Potassium chloride | EC50: 2500 mg/L/72h | 1060 mg/L LC50 96 h<br>750 - 1020 mg/L LC50 96 h | Not listed | EC50: 825 mg/L/48h                      |
| Hydrochloric acid  | -                   | 282 mg/L LC50 96 h                               | -          | -                                       |
| Formaldehyde       | Not listed          | Leuciscus idus: LC50 = 15 mg/L 96h               | Not listed | EC50 = 20 mg/L 96h<br>EC50 = 2 mg/L 48h |

| Component      | Freshwater Algae | Freshwater Fish                            | Microtox  | Water Flea            |
|----------------|------------------|--|---|-----------------------|
| Methyl alcohol | Not listed       | Pimephales promelas: LC50 > 10000 mg/L 96h | EC50 = 39000 mg/L 25 min<br>EC50 = 40000 mg/L 15 min<br>EC50 = 43000 mg/L 5 min | EC50 > 10000 mg/L 24h |

**Persistence and Degradability** No information available.

**Bioaccumulation/ Accumulation** No information available

**Mobility** .

| Component      | log Pow |
|----------------|---------|
| Formaldehyde   | -0.35   |
| Methyl alcohol | -0.74   |

### 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

| Component                | RCRA - U Series Wastes | RCRA - P Series Wastes |
|--------------------------|------------------------|------------------------|
| Formaldehyde - 50-00-0   | U122                   | -                      |
| Methyl alcohol - 67-56-1 | U154                   | -                      |

### 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    |
| Potassium chloride | X    | X   | -    | 231-211-8 | -      |     | X     | X    | X    | X     | X    |
| Hydrochloric acid  | X    | X   | -    | 231-595-7 | -      |     | X     | X    | X    | X     | X    |
| Formaldehyde       | X    | X   | -    | 200-001-8 | -      |     | X     | X    | X    | X     | X    |
| Methyl alcohol     | X    | X   | -    | 200-659-6 | -      |     | 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**

| Component         | CAS-No    | Weight % | SARA 313 - Threshold Values % |
|-------------------|-----------|----------|-------------------------------|
| Hydrochloric acid | 7647-01-0 | 0.1      | 1.0                           |
| Formaldehyde      | 50-00-0   | 0.05     | 0.1                           |
| Methyl alcohol    | 67-56-1   | 0.02     | 1.0                           |

**SARA 311/312 Hazardous Categorization**

**Acute Health Hazard** No  
**Chronic Health Hazard** No  
**Fire Hazard** No  
**Sudden Release of Pressure Hazard** No  
**Reactive Hazard** No

**Clean Water Act**

| Component         | CWA - Hazardous Substances | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants |
|-------------------|----------------------------|-----------------------------|------------------------|---------------------------|
| Hydrochloric acid | X                          | 5000 lb                     | -                      | -                         |
| Formaldehyde      | X                          | 100 lb                      | -                      | -                         |

**Clean Air Act**

| Component         | HAPS Data | Class 1 Ozone Depletors | Class 2 Ozone Depletors |
|-------------------|-----------|-------------------------|-------------------------|
| Hydrochloric acid | X         |                         | -                       |
| Formaldehyde      | X         |                         | -                       |
| Methyl alcohol    | X         |                         | -                       |

**OSHA Occupational Safety and Health Administration**

Not applicable

| Component         | Specifically Regulated Chemicals                   | Highly Hazardous Chemicals |
|-------------------|--|----------------------------|
| Hydrochloric acid | -  | TQ: 5000 lb                |
| Formaldehyde      | 2 ppm STEL<br>0.5 ppm Action Level<br>0.75 ppm TWA | TQ: 1000 lb                |

**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 |
|-------------------|--------------------------|----------------|
| Hydrochloric acid | 5000 lb                  | 5000 lb        |
| Formaldehyde      | 100 lb                   | 100 lb         |
| Methyl alcohol    | 5000 lb                  | -              |

**California Proposition 65**

This product contains the following Proposition 65 chemicals:

| Component      | CAS-No  | California Prop. 65 | Prop 65 NSRL |
|----------------|---------|---------------------|--------------|
| Formaldehyde   | 50-00-0 | Carcinogen          | 40 µg/day    |
| Methyl alcohol | 67-56-1 | Methanol            | -            |

**State Right-to-Know**

| Component         | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|-------------------|---------------|------------|--------------|----------|--------------|
| Hydrochloric acid | X             | X          | X            | X        | X            |
| Formaldehyde      | X             | X          | X            | X        | X            |
| Methyl alcohol    | X             | 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 contains the following DHS chemicals:

| Component         | DHS Chemical Facility Anti-Terrorism Standard                     |
|-------------------|---|
| Hydrochloric acid | 0 lb STQ (anhydrous); 11250 lb STQ (37% concentration or greater) |
| Formaldehyde      | 11250 lb STQ (solution)   |

**Other International Regulations**

**Mexico - Grade** No information available

**Canada**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

**WHMIS Hazard Class** Non-controlled

## 16. Other information

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

**Creation Date** 15-Dec-2009

**Revision Date** 20-Apr-2014

**Print Date** 20-Apr-2014

**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 on 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 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 SDS**