

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

#### 1.1. Product identifier

Product form : Mixture  
Product name : Buffer Solution pH 4.00  
Product code : LC12270

#### 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](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: Hazards identification

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

##### GHS-US classification

Not classified

#### 2.2. Label elements

##### GHS-US labelling

No labelling applicable

#### 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 | 98.94 | Not classified  |
| Potassium Hydrogen Phthalate | (CAS No) 877-24-7  | 1.02  | Eye Irrit. 2B, H320   |
| Formaldehyde, 37% w/w        | (CAS No) 50-00-0   | 0.04  | Flam. Liq. 3, H226<br>Acute Tox. 4 (Oral), H302<br>Acute Tox. 3 (Inhalation), H331<br>Skin Corr. 1B, H314<br>Eye Dam. 1, H318<br>Skin Sens. 1A, H317<br>Carc. 1B, H350<br>Aquatic Acute 2, H401 |

### 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 : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.

# Buffer Solution pH 4.00

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

- 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 : Not expected to present a significant hazard under anticipated conditions of normal use.

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

No additional information available

## 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

- 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

#### 6.1.1. For non-emergency personnel

- Protective equipment : Safety glasses.
- 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.

### 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 : Do not eat, drink or smoke when using this product.

### 7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep container closed when not in use.
- Incompatible products : Strong oxidizers.
- Incompatible materials : None known.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Formaldehyde, 37% w/w (50-00-0)

|           |                                    |                        |
|-----------|------------------------------------|------------------------|
| USA ACGIH | ACGIH Ceiling (mg/m <sup>3</sup> ) | 0.37 mg/m <sup>3</sup> |
| USA ACGIH | ACGIH Ceiling (ppm)                | 0.3 ppm                |

# Buffer Solution pH 4.00

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### Formaldehyde, 37% w/w (50-00-0)

|          |                       |          |
|----------|-----------------------|----------|
| USA OSHA | OSHA PEL (TWA) (ppm)  | 0.75 ppm |
| USA OSHA | OSHA PEL (STEL) (ppm) | 2 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. |
| Personal protective equipment    | : Avoid all unnecessary exposure.  |
| Hand protection                  | : Wear protective gloves.  |
| Eye protection                   | : Chemical goggles or safety glasses.  |
| 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                                      | : Odourless                   |
| Odour threshold                            | : No data available           |
| pH   | : 4                           |
| 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           |
| 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           |
| Density                                    | : 1                           |
| Solubility                                 | : Soluble in water.<br>Water: |
| 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

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

None.

### 10.4. Conditions to avoid

Extremely high or low temperatures.

# Buffer Solution pH 4.00

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 10.5. Incompatible materials

Strong oxidizers.

### 10.6. Hazardous decomposition products

Formaldehyde. Carbon monoxide. Carbon dioxide.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

| Potassium Hydrogen Phthalate (877-24-7) |                       |
|---|-----------------------|
| LD50 oral rat                           | ≥ 3200 mg/kg          |
| ATE US (oral)                           | 3200 mg/kg bodyweight |

| Formaldehyde, 37% w/w (50-00-0) |                      |
|---------------------------------|----------------------|
| LD50 oral rat                   | 500 mg/kg            |
| ATE US (oral)                   | 500 mg/kg bodyweight |
| ATE US (vapours)                | 0.578 mg/l/4h        |

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

Skin corrosion/irritation : Not classified

pH: 4

Serious eye damage/irritation : Not classified

pH: 4

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

| Formaldehyde, 37% w/w (50-00-0) |                            |
|---------------------------------|----------------------------|
| IARC group                      | 1 - Carcinogenic to humans |

Reproductive toxicity : Not classified

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.

## SECTION 12: Ecological information

### 12.1. Toxicity

| Formaldehyde, 37% w/w (50-00-0) |   |
|---------------------------------|---|
| LC50 fishes 1                   | 41 mg/l (96 h; Brachydanio rerio; Pure substance)                           |
| EC50 Daphnia 1                  | 14.7 mg/l (24 h; Daphnia magna; Pure substance)                             |
| LC50 fish 2                     | 62 - 109 mg/l (96 h; Salmo gairdneri (Oncorhynchus mykiss); Pure substance) |
| EC50 Daphnia 2                  | 2 mg/l  |
| TLM fish 1                      | 50 - 200,96 h; Poecilia reticulata; Pure substance                          |
| TLM fish 2                      | 10 - 100,Pisces; Pure substance   |
| TLM other aquatic organisms 1   | 10 - 100,96 h   |
| Threshold limit algae 1         | 2.5 mg/l (192 h; Scenedesmus quadricauda; Pure substance)                   |
| Threshold limit algae 2         | 0.39 mg/l (192 h; Microcystis aeruginosa; Solution <50%)                    |

### 12.2. Persistence and degradability

| Buffer Solution pH 4.00       |                  |
|-------------------------------|------------------|
| Persistence and degradability | Not established. |

# Buffer Solution pH 4.00

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

| <b>Potassium Hydrogen Phthalate (877-24-7)</b> |                  |
|--|------------------|
| Persistence and degradability                  | Not established. |

| <b>Formaldehyde, 37% w/w (50-00-0)</b> |   |
|--|---|
| Persistence and degradability          | Readily biodegradable in water. Biodegradability in soil: no data available. No (test) data on mobility of the components available. Photodegradation in the air. |
| Biochemical oxygen demand (BOD)        | 0.64 g O <sub>2</sub> /g substance  |
| Chemical oxygen demand (COD)           | 1.06 g O <sub>2</sub> /g substance  |
| ThOD                                   | 1.068 g O <sub>2</sub> /g substance   |
| BOD (% of ThOD)                        | (5 day(s)) 0.60   |

| <b>Water (7732-18-5)</b>      |                  |
|-------------------------------|------------------|
| Persistence and degradability | Not established. |

### 12.3. Bioaccumulative potential

| <b>Buffer Solution pH 4.00</b> |                  |
|--------------------------------|------------------|
| Bioaccumulative potential      | Not established. |

| <b>Potassium Hydrogen Phthalate (877-24-7)</b> |                  |
|--|------------------|
| Bioaccumulative potential                      | Not established. |

| <b>Formaldehyde, 37% w/w (50-00-0)</b> |                                  |
|--|----------------------------------|
| Log Pow                                | -0.78 - 0.0                      |
| Bioaccumulative potential              | Bioaccumulation: not applicable. |

| <b>Water (7732-18-5)</b>  |                  |
|---------------------------|------------------|
| Bioaccumulative potential | Not established. |

### 12.4. Mobility in soil

| <b>Formaldehyde, 37% w/w (50-00-0)</b> |                 |
|--|-----------------|
| Ecology - soil                         | Toxic to flora. |

### 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.

### 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 pH 4.00

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

| <b>Formaldehyde, 37% w/w (50-00-0)</b>                                    |  |
|---|--|
| Listed on the United States TSCA (Toxic Substances Control Act) inventory |  |
| RQ (Reportable quantity, section 304 of EPA's List of Lists) :            | 100 lb   |
| SARA Section 311/312 Hazard Classes                                       | Immediate (acute) health hazard<br>Delayed (chronic) health hazard |
| SARA Section 313 - Emission Reporting                                     | 0.1 %  |

### 15.2. International regulations

#### CANADA

| <b>Buffer Solution pH 4.00</b> |   |
|--------------------------------|---|
| WHMIS Classification           | Uncontrolled product according to WHMIS classification criteria |

| <b>Potassium Hydrogen Phthalate (877-24-7)</b>        |   |
|---|---|
| Listed on the Canadian DSL (Domestic Substances List) |   |
| WHMIS Classification                                  | Class D Division 2 Subdivision B - Toxic material causing other toxic effects |

| <b>Formaldehyde, 37% w/w (50-00-0)</b>                |  |
|---|--|
| Listed on the Canadian DSL (Domestic Substances List) |  |
| WHMIS Classification                                  | Class B Division 3 - Combustible Liquid<br>Class D Division 1 Subdivision A - Very toxic material causing immediate and serious toxic effects<br>Class D Division 2 Subdivision A - Very toxic material causing other toxic effects<br>Class D Division 2 Subdivision B - Toxic material causing other toxic effects<br>Class E - Corrosive Material |

| <b>Water (7732-18-5)</b>                              |   |
|---|---|
| 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

No additional information available

### 15.3. US State regulations

| <b>Formaldehyde, 37% w/w (50-00-0)</b>                |   |   |   |                                   |
|---|---|---|---|-----------------------------------|
| U.S. - California - Proposition 65 - Carcinogens List | U.S. - California - Proposition 65 - Developmental Toxicity | U.S. - California - Proposition 65 - Reproductive Toxicity - Female | U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No significance risk level (NSRL) |
| Yes   | Yes   |   |   |                                   |

## SECTION 16: Other information

Revision date : 08/06/2014

Other information : None.

Full text of H-phrases: see section 16:

|                           |   |
|---------------------------|---|
| Acute Tox. 3 (Inhalation) | Acute toxicity (inhal.), Category 3                             |
| Acute Tox. 4 (Oral)       | Acute toxicity (oral), Category 4                               |
| Aquatic Acute 2           | Hazardous to the aquatic environment — Acute Hazard, Category 2 |
| Carc. 1B                  | Carcinogenicity, Category 1B                                    |
| Eye Dam. 1                | Serious eye damage/eye irritation, Category 1                   |
| Eye Irrit. 2B             | Serious eye damage/eye irritation, Category 2B                  |
| Flam. Liq. 3              | Flammable liquids, Category 3                                   |
| Skin Corr. 1B             | Skin corrosion/irritation, Category 1B                          |

# Buffer Solution pH 4.00

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

|               |   |
|---------------|---|
| Skin Sens. 1A | Sensitisation — Skin, category 1A       |
| H226          | Flammable liquid and vapour             |
| H302          | Harmful if swallowed                    |
| H314          | Causes severe skin burns and eye damage |
| H317          | May cause an allergic skin reaction     |
| H318          | Causes serious eye damage               |
| H320          | Causes eye irritation                   |
| H331          | Toxic if inhaled                        |
| H350          | May cause cancer                        |
| H401          | Toxic to aquatic life                   |

NFPA health hazard

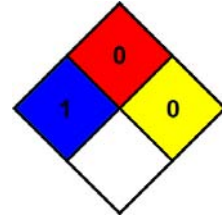
: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

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 : A

SDS US (GHS HazCom 2012)

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