SAFETY DATA SHEET
pH Buffer Package (4.01, 7.00, 10.01), Part Number 5190-0533

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

1.1 Product identifier
Product name : pH Buffer Package (4.01, 7.00, 10.01), Part Number 5190-0533
Part No. (Kit) : 5190-0533
Part No. : Buffer, pH 4.01 - Color Coded Red, Standard
                  5190-0535-1
            Buffer, pH 7.00 - Color Coded Yellow, Standard
                  5190-0537-1
            Buffer, pH 10.01 - Color Coded Blue, Standard
                  5190-0536-1

1.2 Relevant identified uses of the substance or mixture and uses advised against

<table>
<thead>
<tr>
<th>Identified uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytical chemistry.</td>
</tr>
<tr>
<td>Buffer, pH 4.01 - Color Coded Red, Standard 1 x 250 ml</td>
</tr>
<tr>
<td>Buffer, pH 7.00 - Color Coded Yellow, Standard 1 x 250 ml</td>
</tr>
<tr>
<td>Buffer, pH 10.01 - Color Coded Blue, Standard 1 x 250 ml</td>
</tr>
</tbody>
</table>

1.3 Details of the supplier of the safety data sheet
Agilent Technologies Manufacturing GmbH & Co. KG
Hewlett-Packard-Str. 8
76337 Waldbronn
Germany
0800 603 1000
e-mail address of person responsible for this SDS : pdl-msds_author@agilent.com

1.4 Emergency telephone number
Emergency telephone number (with hours of operation) : CHEMTREC®: +(44)-870-8200418

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Product definition : Buffer, pH 4.01 - Color Coded Red, Standard Mixture
                        Buffer, pH 7.00 - Color Coded Yellow, Standard Mixture
                        Buffer, pH 10.01 - Color Coded Blue, Standard Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]
Not classified.

Ingredients of unknown toxicity : Buffer, pH 4.01 - Color Coded Red, Standard Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 1%
                        Buffer, pH 7.00 - Color Coded Yellow, Standard Not applicable.
                        Buffer, pH 10.01 - Color Coded Blue, Standard Not applicable.

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SECTION 2: Hazards identification

**Ingredients of unknown ecotoxicity**
- Buffer, pH 4.01 - Color Coded Red, Standard
  - Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 1%

See Section 11 for more detailed information on health effects and symptoms.

See Section 16 for the full text of the H statements declared above.

2.2 Label elements

**Signal word**
- Buffer, pH 4.01 - Color Coded Red, Standard
  - No signal word.
- Buffer, pH 7.00 - Color Coded Yellow, Standard
  - No signal word.
- Buffer, pH 10.01 - Color Coded Blue, Standard
  - No signal word.

**Hazard statements**
- Buffer, pH 4.01 - Color Coded Red, Standard
  - No known significant effects or critical hazards.
- Buffer, pH 7.00 - Color Coded Yellow, Standard
  - No known significant effects or critical hazards.
- Buffer, pH 10.01 - Color Coded Blue, Standard
  - No known significant effects or critical hazards.

**Precautionary statements**

**Prevention**
- Buffer, pH 4.01 - Color Coded Red, Standard
  - Not applicable.
- Buffer, pH 7.00 - Color Coded Yellow, Standard
  - Not applicable.
- Buffer, pH 10.01 - Color Coded Blue, Standard
  - Not applicable.

**Response**
- Buffer, pH 4.01 - Color Coded Red, Standard
  - Not applicable.
- Buffer, pH 7.00 - Color Coded Yellow, Standard
  - Not applicable.
- Buffer, pH 10.01 - Color Coded Blue, Standard
  - Not applicable.

**Storage**
- Buffer, pH 4.01 - Color Coded Red, Standard
  - Not applicable.
- Buffer, pH 7.00 - Color Coded Yellow, Standard
  - Not applicable.
- Buffer, pH 10.01 - Color Coded Blue, Standard
  - Not applicable.

**Disposal**
- Buffer, pH 4.01 - Color Coded Red, Standard
  - Not applicable.
- Buffer, pH 7.00 - Color Coded Yellow, Standard
  - Not applicable.
- Buffer, pH 10.01 - Color Coded Blue, Standard
  - Not applicable.

**Hazardous ingredients**
- No hazardous ingredient

**Supplemental label elements**
- Buffer, pH 4.01 - Color Coded Red, Standard
  - Not applicable.
- Buffer, pH 7.00 - Color Coded Yellow, Standard
  - Not applicable.
- Buffer, pH 10.01 - Color Coded Blue, Standard
  - Not applicable.

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles**
- Buffer, pH 4.01 - Color Coded Red, Standard
  - Not applicable.
- Buffer, pH 7.00 - Color Coded Yellow, Standard
  - Not applicable.
- Buffer, pH 10.01 - Color Coded Blue, Standard
  - Not applicable.

**Date of issue/Date of revision**
- 24/06/2016
SECTION 2: Hazards identification

Special packaging requirements

Tactile warning of danger

Buffer, pH 4.01 - Color Coded Red, Standard
Not applicable.

Buffer, pH 7.00 - Color Coded Yellow, Standard
Not applicable.

Buffer, pH 10.01 - Color Coded Blue, Standard
Not applicable.

2.3 Other hazards

Other hazards which do not result in classification

Buffer, pH 4.01 - Color Coded Red, Standard
None known.

Buffer, pH 7.00 - Color Coded Yellow, Standard
None known.

Buffer, pH 10.01 - Color Coded Blue, Standard
None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Buffer, pH 4.01 - Color Coded Red, Standard
Mixture

Buffer, pH 7.00 - Color Coded Yellow, Standard
Mixture

Buffer, pH 10.01 - Color Coded Blue, Standard
Mixture

Product/ingredient name

No hazardous ingredient

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs or vPvBs or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit


[5] Substance of equivalent concern

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact

Buffer, pH 4.01 - Color Coded Red, Standard
Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Buffer, pH 7.00 - Color Coded Yellow, Standard
Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Buffer, pH 10.01 - Color Coded Blue, Standard
Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation

Buffer, pH 4.01 - Color Coded Red, Standard
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Buffer, pH 7.00 - Color Coded Yellow, Standard
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Buffer, pH 10.01 - Color Coded Blue, Standard
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
**SECTION 4: First aid measures**

<table>
<thead>
<tr>
<th>Skin contact</th>
<th>Buffer, pH 4.01 - Color Coded Red, Standard</th>
<th>Buffer, pH 7.00 - Color Coded Yellow, Standard</th>
<th>Buffer, pH 10.01 - Color Coded Blue, Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Buffer, pH 4.01</strong></td>
<td>Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.</td>
<td>Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.</td>
<td>Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.</td>
</tr>
<tr>
<td><strong>Buffer, pH 7.00</strong></td>
<td>Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.</td>
<td>Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.</td>
<td>Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.</td>
</tr>
<tr>
<td><strong>Buffer, pH 10.01</strong></td>
<td>Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.</td>
<td>Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.</td>
<td>Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.</td>
</tr>
</tbody>
</table>

**Protection of first-aiders**

<table>
<thead>
<tr>
<th>Protection of first-aiders</th>
<th>Buffer, pH 4.01 - Color Coded Red, Standard</th>
<th>Buffer, pH 7.00 - Color Coded Yellow, Standard</th>
<th>Buffer, pH 10.01 - Color Coded Blue, Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Buffer, pH 4.01</strong></td>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
</tr>
<tr>
<td><strong>Buffer, pH 7.00</strong></td>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
</tr>
<tr>
<td><strong>Buffer, pH 10.01</strong></td>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
</tr>
</tbody>
</table>

**4.2 Most important symptoms and effects, both acute and delayed**

**Potential acute health effects**

<table>
<thead>
<tr>
<th>Eye contact</th>
<th>Buffer, pH 4.01 - Color Coded Red, Standard</th>
<th>Buffer, pH 7.00 - Color Coded Yellow, Standard</th>
<th>Buffer, pH 10.01 - Color Coded Blue, Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Buffer, pH 4.01</strong></td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td><strong>Buffer, pH 7.00</strong></td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td><strong>Buffer, pH 10.01</strong></td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inhalation</th>
<th>Buffer, pH 4.01 - Color Coded Red, Standard</th>
<th>Buffer, pH 7.00 - Color Coded Yellow, Standard</th>
<th>Buffer, pH 10.01 - Color Coded Blue, Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Buffer, pH 4.01</strong></td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td><strong>Buffer, pH 7.00</strong></td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td><strong>Buffer, pH 10.01</strong></td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Skin contact</th>
<th>Buffer, pH 4.01 - Color Coded Red, Standard</th>
<th>Buffer, pH 7.00 - Color Coded Yellow, Standard</th>
<th>Buffer, pH 10.01 - Color Coded Blue, Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Buffer, pH 4.01</strong></td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td><strong>Buffer, pH 7.00</strong></td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td><strong>Buffer, pH 10.01</strong></td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ingestion</th>
<th>Buffer, pH 4.01 - Color Coded Red, Standard</th>
<th>Buffer, pH 7.00 - Color Coded Yellow, Standard</th>
<th>Buffer, pH 10.01 - Color Coded Blue, Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Buffer, pH 4.01</strong></td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td><strong>Buffer, pH 7.00</strong></td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td><strong>Buffer, pH 10.01</strong></td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

**Over-exposure signs/symptoms**

**Date of issue/Date of revision**

: 24/06/2016
### SECTION 4: First aid measures

| Eye contact | Buffer, pH 4.01 - Color Coded Red, Standard | No specific data. |
|            | Buffer, pH 7.00 - Color Coded Yellow, Standard | No specific data. |
|            | Buffer, pH 10.01 - Color Coded Blue, Standard | No specific data. |
| Inhalation | Buffer, pH 4.01 - Color Coded Red, Standard | No specific data. |
|            | Buffer, pH 7.00 - Color Coded Yellow, Standard | No specific data. |
|            | Buffer, pH 10.01 - Color Coded Blue, Standard | No specific data. |
| Skin contact | Buffer, pH 4.01 - Color Coded Red, Standard | No specific data. |
|            | Buffer, pH 7.00 - Color Coded Yellow, Standard | No specific data. |
|            | Buffer, pH 10.01 - Color Coded Blue, Standard | No specific data. |
| Ingestion | Buffer, pH 4.01 - Color Coded Red, Standard | No specific data. |
|            | Buffer, pH 7.00 - Color Coded Yellow, Standard | No specific data. |
|            | Buffer, pH 10.01 - Color Coded Blue, Standard | No specific data. |

### Notes to physician

| Buffer, pH 4.01 - Color Coded Red, Standard | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| Buffer, pH 7.00 - Color Coded Yellow, Standard | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| Buffer, pH 10.01 - Color Coded Blue, Standard | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |

### Specific treatments

| Buffer, pH 4.01 - Color Coded Red, Standard | No specific treatment. |
| Buffer, pH 7.00 - Color Coded Yellow, Standard | No specific treatment. |
| Buffer, pH 10.01 - Color Coded Blue, Standard | No specific treatment. |

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

| Suitable extinguishing media | Buffer, pH 4.01 - Color Coded Red, Standard | Use an extinguishing agent suitable for the surrounding fire. |
|                            | Buffer, pH 7.00 - Color Coded Yellow, Standard | Use an extinguishing agent suitable for the surrounding fire. |
|                            | Buffer, pH 10.01 - Color Coded Blue, Standard | Use an extinguishing agent suitable for the surrounding fire. |

| Unsuitable extinguishing media | Buffer, pH 4.01 - Color Coded Red, Standard | None known. |
|                               | Buffer, pH 7.00 - Color Coded Yellow, Standard | None known. |
|                               | Buffer, pH 10.01 - Color Coded Blue, Standard | None known. |

#### 5.2 Special hazards arising from the substance or mixture
SECTION 5: Firefighting measures

<table>
<thead>
<tr>
<th>Buffer, pH 4.01 - Color Coded Red, Standard</th>
<th>Buffer, pH 7.00 - Color Coded Yellow, Standard</th>
<th>Buffer, pH 10.01 - Color Coded Blue, Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
</tr>
</tbody>
</table>

Hazardous combustion products

<table>
<thead>
<tr>
<th>Buffer, pH 4.01 - Color Coded Red, Standard</th>
<th>Buffer, pH 7.00 - Color Coded Yellow, Standard</th>
<th>Buffer, pH 10.01 - Color Coded Blue, Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decomposition products may include the following materials: carbon dioxide</td>
<td>No specific data.</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

5.3 Advice for firefighters

- **Special precautions for fire-fighters**
  - Buffer, pH 4.01 - Color Coded Red, Standard
  - Buffer, pH 7.00 - Color Coded Yellow, Standard
  - Buffer, pH 10.01 - Color Coded Blue, Standard

- **Special protective equipment for fire-fighters**
  - Buffer, pH 4.01 - Color Coded Red, Standard
  - Buffer, pH 7.00 - Color Coded Yellow, Standard
  - Buffer, pH 10.01 - Color Coded Blue, Standard

5.3 Advice for firefighters

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- **For non-emergency personnel**
  - Buffer, pH 4.01 - Color Coded Red, Standard
  - Buffer, pH 7.00 - Color Coded Yellow, Standard
  - Buffer, pH 10.01 - Color Coded Blue, Standard

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## SECTION 6: Accidental release measures

| For emergency responders | Buffer, pH 4.01 - Color Coded Red, Standard | If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". |
| Buffer, pH 7.00 - Color Coded Yellow, Standard | If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". |
| Buffer, pH 10.01 - Color Coded Blue, Standard | If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". |

### 6.2 Environmental precautions

| Buffer, pH 4.01 - Color Coded Red, Standard | Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). |
| Buffer, pH 7.00 - Color Coded Yellow, Standard | Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). |
| Buffer, pH 10.01 - Color Coded Blue, Standard | Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). |

### 6.3 Methods and material for containment and cleaning up

| Methods for cleaning up | Buffer, pH 4.01 - Color Coded Red, Standard | Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor. |
| Buffer, pH 7.00 - Color Coded Yellow, Standard | Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor. |
| Buffer, pH 10.01 - Color Coded Blue, Standard | Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor. |

### 6.4 Reference to other sections

- See Section 1 for emergency contact information.
- See Section 8 for information on appropriate personal protective equipment.
- See Section 13 for additional waste treatment information.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

| Protective measures | Buffer, pH 4.01 - Color Coded Red, Standard | Put on appropriate personal protective equipment (see Section 8). |
| Buffer, pH 7.00 - Color Coded Yellow, Standard | Put on appropriate personal protective equipment (see Section 8). |
| Buffer, pH 10.01 - Color Coded Blue, Standard | Put on appropriate personal protective equipment (see Section 8). |

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**SECTION 7: Handling and storage**

<table>
<thead>
<tr>
<th>Advice on general occupational hygiene</th>
<th>Buffer, pH 4.01 - Color Coded Red, Standard</th>
<th>Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffer, pH 7.00 - Color Coded Yellow, Standard</td>
<td>Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.</td>
<td></td>
</tr>
<tr>
<td>Buffer, pH 10.01 - Color Coded Blue, Standard</td>
<td>Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.</td>
<td></td>
</tr>
</tbody>
</table>

**7.2 Conditions for safe storage, including any incompatibilities**

| Buffer, pH 4.01 - Color Coded Red, Standard | Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. |
| Buffer, pH 7.00 - Color Coded Yellow, Standard | Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. |
| Buffer, pH 10.01 - Color Coded Blue, Standard | Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. |

**7.3 Specific end use(s)**

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Buffer, pH 4.01 - Color Coded Red, Standard</th>
<th>Industrial applications, Professional applications.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffer, pH 7.00 - Color Coded Yellow, Standard</td>
<td>Industrial applications, Professional applications.</td>
<td></td>
</tr>
<tr>
<td>Buffer, pH 10.01 - Color Coded Blue, Standard</td>
<td>Industrial applications, Professional applications.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Industrial sector specific solutions</th>
<th>Buffer, pH 4.01 - Color Coded Red, Standard</th>
<th>Not applicable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffer, pH 7.00 - Color Coded Yellow, Standard</td>
<td>Not applicable.</td>
<td></td>
</tr>
<tr>
<td>Buffer, pH 10.01 - Color Coded Blue, Standard</td>
<td>Not applicable.</td>
<td></td>
</tr>
</tbody>
</table>
SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

No DNELs/DMELs available.

PNECs

No PNECs available

8.2 Exposure controls

Appropriate engineering controls

Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

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### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Buffer, pH 4.01</th>
<th>Buffer, pH 7.00</th>
<th>Buffer, pH 10.01</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical state</strong></td>
<td>Liquid.</td>
<td>Liquid.</td>
<td>Liquid.</td>
</tr>
<tr>
<td><strong>Colour</strong></td>
<td>Pink [Light]</td>
<td>Yellow [Light]</td>
<td>Blue [Light]</td>
</tr>
<tr>
<td><strong>Odour</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Odour threshold</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>4.01</td>
<td>7</td>
<td>10.01</td>
</tr>
<tr>
<td><strong>Melting point/freezing point</strong></td>
<td>0°C</td>
<td>0°C</td>
<td>0°C</td>
</tr>
<tr>
<td><strong>Initial boiling point and boiling range</strong></td>
<td>100°C</td>
<td>100°C</td>
<td>100°C</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

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### SECTION 9: Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Buffer, pH 4.01 - Color Coded Red, Standard</th>
<th>Buffer, pH 7.00 - Color Coded Yellow, Standard</th>
<th>Buffer, pH 10.01 - Color Coded Blue, Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Upper/lower flammability or explosive limits</strong></td>
<td>Not available</td>
<td>Not available</td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Vapour pressure</strong></td>
<td>Not available</td>
<td>Not available</td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Vapour density</strong></td>
<td>Not available</td>
<td>Not available</td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Solubility(ies)</strong></td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td><strong>Partition coefficient: n-octanol/water</strong></td>
<td>Not available</td>
<td>Not available</td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature</strong></td>
<td>Not available</td>
<td>Not available</td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Decomposition temperature</strong></td>
<td>Not available</td>
<td>Not available</td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>Not available</td>
<td>Not available</td>
<td>Not available</td>
</tr>
</tbody>
</table>
SECTION 9: Physical and chemical properties

**Explosive properties**
- Buffer, pH 4.01 - Color Coded Red, Standard
- Buffer, pH 7.00 - Color Coded Yellow, Standard
- Buffer, pH 10.01 - Color Coded Blue, Standard
  Not available.

**Oxidising properties**
- Buffer, pH 4.01 - Color Coded Red, Standard
- Buffer, pH 7.00 - Color Coded Yellow, Standard
- Buffer, pH 10.01 - Color Coded Blue, Standard
  Not available.

9.2 Other information
No additional information.

SECTION 10: Stability and reactivity

| 10.1 Reactivity | Buffer, pH 4.01 - Color Coded Red, Standard | No specific test data related to reactivity available for this product or its ingredients. |
| : | Buffer, pH 7.00 - Color Coded Yellow, Standard | No specific test data related to reactivity available for this product or its ingredients. |
| : | Buffer, pH 10.01 - Color Coded Blue, Standard | No specific test data related to reactivity available for this product or its ingredients. |

| 10.2 Chemical stability |
| : Buffer, pH 4.01 - Color Coded Red, Standard | The product is stable. |
| : Buffer, pH 7.00 - Color Coded Yellow, Standard | The product is stable. |
| : Buffer, pH 10.01 - Color Coded Blue, Standard | The product is stable. |

| 10.3 Possibility of hazardous reactions |
| : Buffer, pH 4.01 - Color Coded Red, Standard | Under normal conditions of storage and use, hazardous reactions will not occur. |
| : Buffer, pH 7.00 - Color Coded Yellow, Standard | Under normal conditions of storage and use, hazardous reactions will not occur. |
| : Buffer, pH 10.01 - Color Coded Blue, Standard | Under normal conditions of storage and use, hazardous reactions will not occur. |

| 10.4 Conditions to avoid |
| : Buffer, pH 4.01 - Color Coded Red, Standard | No specific data. |
| : Buffer, pH 7.00 - Color Coded Yellow, Standard | No specific data. |
| : Buffer, pH 10.01 - Color Coded Blue, Standard | No specific data. |

| 10.5 Incompatible materials |
| : Buffer, pH 4.01 - Color Coded Red, Standard | May react or be incompatible with oxidising materials. |
| : Buffer, pH 7.00 - Color Coded Yellow, Standard | May react or be incompatible with oxidising materials. |
| : Buffer, pH 10.01 - Color Coded Blue, Standard | May react or be incompatible with oxidising materials. |

| 10.6 Hazardous decomposition products |
| : Buffer, pH 4.01 - Color Coded Red, Standard | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
| : Buffer, pH 7.00 - Color Coded Yellow, Standard | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
| : Buffer, pH 10.01 - Color Coded Blue, Standard | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
Not available.

Acute toxicity estimates
Not available.

Irritation/Corrosion

Conclusion/Summary : Not available.

Sensitiser

Conclusion/Summary : Not available.

Chronic toxicity / Carcinogenicity / Mutagenicity / Teratogenicity / Reproductive toxicity
Not available.

Specific target organ toxicity (single exposure)
Not available.

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Information on likely routes of exposure

: Buffer, pH 4.01 - Color Coded Red, Standard
  No available.
  Buffer, pH 7.00 - Color Coded Yellow, Standard
  No available.
  Buffer, pH 10.01 - Color Coded Blue, Standard
  No available.

Potential acute health effects

Inhalation

: Buffer, pH 4.01 - Color Coded Red, Standard
  No known significant effects or critical hazards.
  Buffer, pH 7.00 - Color Coded Yellow, Standard
  No known significant effects or critical hazards.
  Buffer, pH 10.01 - Color Coded Blue, Standard
  No known significant effects or critical hazards.

Ingestion

: Buffer, pH 4.01 - Color Coded Red, Standard
  No known significant effects or critical hazards.
  Buffer, pH 7.00 - Color Coded Yellow, Standard
  No known significant effects or critical hazards.
  Buffer, pH 10.01 - Color Coded Blue, Standard
  No known significant effects or critical hazards.

Skin contact

: Buffer, pH 4.01 - Color Coded Red, Standard
  No known significant effects or critical hazards.
  Buffer, pH 7.00 - Color Coded Yellow, Standard
  No known significant effects or critical hazards.
  Buffer, pH 10.01 - Color Coded Blue, Standard
  No known significant effects or critical hazards.

Eye contact

: Buffer, pH 4.01 - Color Coded Red, Standard
  No known significant effects or critical hazards.
  Buffer, pH 7.00 - Color Coded Yellow, Standard
  No known significant effects or critical hazards.
  Buffer, pH 10.01 - Color Coded Blue, Standard
  No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation

: Buffer, pH 4.01 - Color Coded Red, Standard
  No specific data.
  Buffer, pH 7.00 - Color Coded Yellow, Standard
  No specific data.
  Buffer, pH 10.01 - Color Coded Blue, Standard
  No specific data.

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SECTION 11: Toxicological information

Ingestion
Buffer, pH 4.01 - Color Coded Red, Standard
Buffer, pH 7.00 - Color Coded Yellow, Standard
Buffer, pH 10.01 - Color Coded Blue, Standard
No specific data.

Skin contact
Buffer, pH 4.01 - Color Coded Red, Standard
Buffer, pH 7.00 - Color Coded Yellow, Standard
Buffer, pH 10.01 - Color Coded Blue, Standard
No specific data.

Eye contact
Buffer, pH 4.01 - Color Coded Red, Standard
Buffer, pH 7.00 - Color Coded Yellow, Standard
Buffer, pH 10.01 - Color Coded Blue, Standard
No specific data.

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

Short term exposure
Potential immediate effects: Not available.
Potential delayed effects: Not available.

Long term exposure
Potential immediate effects: Not available.
Potential delayed effects: Not available.

Potential chronic health effects

General
Buffer, pH 4.01 - Color Coded Red, Standard
Buffer, pH 7.00 - Color Coded Yellow, Standard
Buffer, pH 10.01 - Color Coded Blue, Standard
No known significant effects or critical hazards.

Carcinogenicity
Buffer, pH 4.01 - Color Coded Red, Standard
Buffer, pH 7.00 - Color Coded Yellow, Standard
Buffer, pH 10.01 - Color Coded Blue, Standard
No known significant effects or critical hazards.

Mutagenicity
Buffer, pH 4.01 - Color Coded Red, Standard
Buffer, pH 7.00 - Color Coded Yellow, Standard
Buffer, pH 10.01 - Color Coded Blue, Standard
No known significant effects or critical hazards.

Teratogenicity
Buffer, pH 4.01 - Color Coded Red, Standard
Buffer, pH 7.00 - Color Coded Yellow, Standard
Buffer, pH 10.01 - Color Coded Blue, Standard
No known significant effects or critical hazards.

Developmental effects
Buffer, pH 4.01 - Color Coded Red, Standard
Buffer, pH 7.00 - Color Coded Yellow, Standard
Buffer, pH 10.01 - Color Coded Blue, Standard
No known significant effects or critical hazards.

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SECTION 11: Toxicological information

Fertility effects:
- Buffer, pH 4.01 - Color Coded Red, Standard
  No known significant effects or critical hazards.
- Buffer, pH 7.00 - Color Coded Yellow, Standard
  No known significant effects or critical hazards.
- Buffer, pH 10.01 - Color Coded Blue, Standard
  No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Conclusion/Summary: Not available.

12.2 Persistence and degradability

Not available.

12.3 Bioaccumulative potential

Not available.

12.4 Mobility in soil

- Soil/water partition coefficient ($K_{OC}$): Not available.
- Mobility: Not available.

12.5 Results of PBT and vPvB assessment

- PBT: Not applicable.
- vPvB: Not applicable.

12.6 Other adverse effects: No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal: The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste: Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

Packaging

Methods of disposal: The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions: This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

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SECTION 14: Transport information

Regulatory information

ADR/RID / IMDG / IATA : Not regulated.

14.6 Special precautions for user

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

: Not available.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

: Buffer, pH 4.01 - Color Coded Red, Standard

: Buffer, pH 7.00 - Color Coded Yellow, Standard

: Buffer, pH 10.01 - Color Coded Blue, Standard

Not applicable.

Other EU regulations

Europe inventory : All components are listed or exempted.

Seveso Directive

This product is not controlled under the Seveso Directive.

National regulations

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Inform Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

International lists

National inventory

Australia : All components are listed or exempted.

Canada : All components are listed or exempted.

China : All components are listed or exempted.

Japan : Japan inventory (ENCS): All components are listed or exempted.

Japan inventory (ISHL): All components are listed or exempted.

Malaysia : Not determined.

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SECTION 15: Regulatory information

<table>
<thead>
<tr>
<th>Country</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Zealand</td>
<td>All components are listed or exempted.</td>
</tr>
<tr>
<td>Philippines</td>
<td>All components are listed or exempted.</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>All components are listed or exempted.</td>
</tr>
<tr>
<td>Taiwan</td>
<td>All components are listed or exempted.</td>
</tr>
<tr>
<td>Turkey</td>
<td>Not determined.</td>
</tr>
<tr>
<td>United States</td>
<td>All components are listed or exempted.</td>
</tr>
</tbody>
</table>

15.2 Chemical safety assessment: This product contains substances for which Chemical Safety Assessments might still be required.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms:

- ATE = Acute Toxicity Estimate
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DNEL = Derived No Effect Level
- EUH statement = CLP-specific Hazard statement
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not classified</td>
<td></td>
</tr>
</tbody>
</table>

Date of issue/ Date of revision: 24/06/2016

Date of previous issue: No previous validation.

Version: 1

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