Safety Data Sheet

Cat. # R027

PBS, Phosphate Buffered Saline

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

1.1. Product identifier

Product form: Mixture
Product name: Phosphate Buffered Saline (PBS) [10X]
Product code: P020, 020P, 312P
Product group: Raw material

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

1.2.1. Relevant identified uses
No additional information available

1.2.2. Uses advised against
No additional information available

1.3. Details of the supplier of the safety data sheet

Geno Technology, Inc./ G-Biosciences
9800 Page Avenue
63132-1429 Saint Louis - United States
T 800-628-7730 - F 314-991-1504
technical@GBiosciences.com - www.GBiosciences.com

1.4. Emergency telephone number

Emergency number: Chemtrec 1-800-424-9300 (USA/Canada), +1-703-527-3887 (Intl)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Adverse physicochemical, human health and environmental effects

To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]
No labelling applicable

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deionized water</td>
<td>(CAS-No.) 7732-18-5</td>
<td>&gt;= 80</td>
<td>Not classified</td>
</tr>
<tr>
<td>sodium chloride</td>
<td>(CAS-No.) 7647-14-5 (EC-No.) 231-598-3</td>
<td>5 - 10</td>
<td>Not classified</td>
</tr>
<tr>
<td>Sodium Phosphate (Dibasic)</td>
<td>(CAS-No.) 7558-79-4 (EC-No.) 231-448-7</td>
<td>0.5 - 2</td>
<td>Not classified</td>
</tr>
<tr>
<td>Potassium Phosphate (Monobasic)</td>
<td>(CAS-No.) 7778-77-0 (EC-No.) 231-913-4</td>
<td>0.05 - 0.5</td>
<td>Not classified</td>
</tr>
<tr>
<td>potassium chloride</td>
<td>(CAS-No.) 7447-40-7 (EC-No.) 231-211-8</td>
<td>0.05 - 0.5</td>
<td>Not classified</td>
</tr>
</tbody>
</table>
**Phosphate Buffered Saline (PBS) [10X]**

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

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### SECTION 4: First aid measures

**4.1. Description of first aid measures**

- **First-aid measures after inhalation**: Remove person to fresh air and keep comfortable for breathing.
- **First-aid measures after skin contact**: Wash skin with plenty of water.
- **First-aid measures after eye contact**: Rinse eyes with water as a precaution.
- **First-aid measures after ingestion**: Call a poison center or a doctor if you feel unwell.

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

No additional information available

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

Treat symptomatically.

### SECTION 5: Firefighting measures

**5.1. Extinguishing media**

- **Suitable extinguishing media**: Water spray. Dry powder. Foam. Carbon dioxide.

**5.2. Special hazards arising from the substance or mixture**

- **Hazardous decomposition products in case of fire**: Toxic fumes may be released.

**5.3. Advice for firefighters**

Protection during firefighting: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

### SECTION 6: Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

**6.1.1. For non-emergency personnel**

- **Emergency procedures**: Ventilate spillage area.

**6.1.2. For emergency responders**

- **Protective equipment**: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

**6.2. Environmental precautions**

Avoid release to the environment.

**6.3. Methods and material for containment and cleaning up**

- **Methods for cleaning up**: Take up liquid spill into absorbent material.
- **Other information**: Dispose of materials or solid residues at an authorized site.

**6.4. Reference to other sections**

For further information refer to section 13.

### SECTION 7: Handling and storage

**7.1. Precautions for safe handling**

- **Precautions for safe handling**: Ensure good ventilation of the work station. Wear personal protective equipment.
- **Hygiene measures**: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

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

- **Storage conditions**: Store in a well-ventilated place. Keep cool.

**7.3. Specific end use(s)**

No additional information available

### SECTION 8: Exposure controls/personal protection

**8.1. Control parameters**

No additional information available

**8.2. Exposure controls**

**Appropriate engineering controls:**

Ensure good ventilation of the work station.

**Hand protection:**

Protective gloves
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Eye protection:
Safety glasses

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid
None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials
No additional information available

10.6. Hazardous decomposition products
Hazardous decomposition products.
# SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th></th>
<th>Acute toxicity (oral)</th>
<th>Acute toxicity (dermal)</th>
<th>Acute toxicity (inhalation)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not classified</td>
<td>Not classified</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

**Potassium Chloride (7447-40-7)**
- LD$_{50}$ oral rat: 3020 mg/kg bodyweight (Rat, Female, Experimental value)

**Sodium Chloride (7647-14-5)**
- LD$_{50}$ oral rat: > 3980 mg/kg bodyweight (Rat, Experimental value)
- LD$_{50}$ dermal rabbit: > 10000 mg/kg (Rabbit, Experimental value)
- LC$_{50}$ inhalation rat (mg/l): > 42 mg/l air (1 h, Rat, Male, Experimental value)

**Sodium Phosphate (Dibasic) (7558-79-4)**
- LD$_{50}$ oral rat: 17000 mg/kg (Rat)
- LD$_{50}$ dermal rat: > 7940 mg/kg (Rat)

**Potassium Phosphate (Monobasic) (7778-77-0)**
- LD$_{50}$ oral rat: 7100 mg/kg (Rat)
- LD$_{50}$ dermal rabbit: > 4640 mg/kg (Rabbit)

<table>
<thead>
<tr>
<th></th>
<th>Skin corrosion/irritation</th>
<th>Serious eye damage/irritation</th>
<th>Respiratory or skin sensitisation</th>
<th>Germ cell mutagenicity</th>
<th>Carcinogenicity</th>
<th>Reproductive toxicity</th>
<th>STOT-single exposure</th>
<th>STOT-repeated exposure</th>
<th>Aspiration hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not classified</td>
<td>Not classified</td>
<td>Not classified</td>
<td>Not classified</td>
<td>Not classified</td>
<td>Not classified</td>
<td>Not classified</td>
<td>Not classified</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

# SECTION 12: Ecological information

### 12.1. Toxicity

**Ecology - general**
- The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

**Acute aquatic toxicity**
- Not classified

**Chronic aquatic toxicity**
- Not classified

**Potassium Chloride (7447-40-7)**
- LC$_{50}$ fish 1: 2010 mg/l (96 h, Lepomis macrochirus, Static system)
- LC$_{50}$ fish 2: 880 mg/l (EPA 600/4-90/027, 96 h, Pimephales promelas, Static system, Fresh water, Experimental value)
- EC$_{50}$ Daphnia 1: 660 mg/l (EPA 600/4-90/027, 48 h, Daphnia magna, Static system, Fresh water, Experimental value)
- EC$_{50}$ 72h algae (1): 2500 mg/l (Scenedesmus subspicatus)
- Er$_{C50}$ (algae): > 100 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value)

**Sodium Chloride (7647-14-5)**
- LC$_{50}$ fish 1: 5840 mg/l (ASTM, 96 h, Lepomis macrochirus, Flow-through system, Fresh water, Experimental value)

**Sodium Phosphate (Dibasic) (7558-79-4)**
- LC$_{50}$ fish 1: > 2400 mg/l (OECD 203: Fish, Acute Toxicity Test, 48 h, Leuciscus idus)

**Potassium Phosphate (Monobasic) (7778-77-0)**
- LC$_{50}$ fish 1: > 900 mg/l (48 h, Leuciscus idus)

### 12.2. Persistence and degradability

**Potassium Chloride (7447-40-7)**
- Biodegradability: not applicable.
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Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

<table>
<thead>
<tr>
<th>Component</th>
<th>Biochemical oxygen demand (BOD)</th>
<th>Chemical oxygen demand (COD)</th>
<th>ThOD</th>
<th>Log Pow</th>
<th>Bioaccumulative potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>potassium chloride (7447-40-7)</td>
<td>Not applicable (inorganic)</td>
<td>Not applicable (inorganic)</td>
<td>Not applicable (inorganic)</td>
<td>-0.46 (Estimated value)</td>
<td>Not bioaccumulative.</td>
</tr>
<tr>
<td>sodium chloride (7647-14-5)</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>-3 (Calculated)</td>
<td>Not bioaccumulative.</td>
</tr>
<tr>
<td>Sodium Phosphate (Dibasic) (7558-79-4)</td>
<td>Biodegradability: not applicable.</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not bioaccumulative.</td>
</tr>
<tr>
<td>Potassium Phosphate (Monobasic) (7778-77-0)</td>
<td>Biodegradability: not applicable.</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not bioaccumulative.</td>
</tr>
<tr>
<td>12.3. Bioaccumulative potential</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>potassium chloride (7447-40-7)</td>
<td>Log Pow</td>
<td>-0.46 (Estimated value)</td>
<td>Bioaccumulative potential</td>
<td>Not bioaccumulative.</td>
<td></td>
</tr>
<tr>
<td>sodium chloride (7647-14-5)</td>
<td>Log Pow</td>
<td>-3 (Calculated)</td>
<td>Bioaccumulative potential</td>
<td>Not bioaccumulative.</td>
<td></td>
</tr>
<tr>
<td>Sodium Phosphate (Dibasic) (7558-79-4)</td>
<td>Bioaccumulative potential</td>
<td>Not bioaccumulative.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potassium Phosphate (Monobasic) (7778-77-0)</td>
<td>Bioaccumulative potential</td>
<td>No bioaccumulation data available.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>12.4. Mobility in soil</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>potassium chloride (7447-40-7)</td>
<td>Ecology - soil</td>
<td>No (test)data on mobility of the substance available.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>sodium chloride (7647-14-5)</td>
<td>Surface tension</td>
<td>73.03 mN/m (23 °C, 14.5 g/l)</td>
<td>Ecology - soil</td>
<td>No (test)data on mobility of the substance available.</td>
<td></td>
</tr>
</tbody>
</table>

12.5. Results of PBT and vPvB assessment
Component
<table>
<thead>
<tr>
<th>Component</th>
<th>This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII</th>
<th>This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium chloride (7647-14-5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>potassium chloride (7447-40-7)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12.6. Other adverse effects
No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
### SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

#### 14.1. UN number

| UN-No. (ADR) | Not regulated |
| UN-No. (IMDG) | Not regulated |
| UN-No. (IATA) | Not regulated |
| UN-No. (ADN) | Not regulated |
| UN-No. (RID) | Not regulated |

#### 14.2. UN proper shipping name

| Proper Shipping Name (ADR) | Not regulated |
| Proper Shipping Name (IMDG) | Not regulated |
| Proper Shipping Name (IATA) | Not regulated |
| Proper Shipping Name (ADN) | Not regulated |
| Proper Shipping Name (RID) | Not regulated |

#### 14.3. Transport hazard class(es)

**ADR**

| Transport hazard class(es) (ADR) | Not regulated |

**IMDG**

| Transport hazard class(es) (IMDG) | Not regulated |

**IATA**

| Transport hazard class(es) (IATA) | Not regulated |

**ADN**

| Transport hazard class(es) (ADN) | Not regulated |

**RID**

| Transport hazard class(es) (RID) | Not regulated |

#### 14.4. Packing group

| Packing group (ADR) | Not regulated |
| Packing group (IMDG) | Not regulated |
| Packing group (IATA) | Not regulated |
| Packing group (ADN) | Not regulated |
| Packing group (RID) | Not regulated |

#### 14.5. Environmental hazards

| Dangerous for the environment | No |
| Marine pollutant | No |
| Other information | No supplementary information available |

#### 14.6. Special precautions for user

- **Overland transport**
  Not regulated

- **Transport by sea**
  Not regulated

- **Air transport**
  Not regulated

- **Inland waterway transport**
  Not regulated

- **Rail transport**
  Not regulated

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

Not applicable
### SECTION 15: Regulatory information

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

<table>
<thead>
<tr>
<th>15.1.1. EU-Regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contains no REACH substances with Annex XVII restrictions</td>
</tr>
<tr>
<td>Contains no substance on the REACH candidate list</td>
</tr>
<tr>
<td>Contains no REACH Annex XIV substances</td>
</tr>
</tbody>
</table>

#### 15.1.2. National regulations

No additional information available

#### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

### SECTION 16: Other information

Safety Data Sheet applicable for regions: GB - United Kingdom

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.