Safety Data Sheet

Cat. # 786-649

RBC Lysis Buffer

Size: 100ml
SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product form: Mixture
Product name: RBC Lysis Buffer
Product code: 009R
Product group: Trade product

1.2. Relevant identified uses of the substance or mixture and uses advised against
1.2.1. Relevant identified uses
Main use category: Research purposes

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
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>ammonium chloride</td>
<td>(CAS-No.) 12125-02-9 (EC-No.) 235-186-4 (EC Index-No.) 017-014-00-8</td>
<td>0.5 - 2</td>
<td>Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319</td>
</tr>
<tr>
<td>sodium bicarbonate</td>
<td>(CAS-No.) 144-55-8 (EC-No.) 205-633-8</td>
<td>0.05 - 0.5</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

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
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
ammonium chloride (12125-02-9)
United Kingdom - Occupational Exposure Limits

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL TWA (mg/m³)</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>WEL STEL (mg/m³)</td>
<td>20 mg/m³</td>
</tr>
</tbody>
</table>

8.2. Exposure controls
Appropriate engineering controls:
Ensure good ventilation of the work station.

Hand protection:
Protective gloves

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>Clear.</td>
</tr>
<tr>
<td>Odour</td>
<td>None.</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>Toxicity</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity (oral)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity (dermal)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity (inhalation)</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

sodium bicarbonate (144-55-8)

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>&gt; 4000 mg/kg (FIFRA (40 CFR), Rat, Male / female, Experimental value, Oral)</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
<td>&gt; 4.74 mg/l (Other, 4.5 h, Rat, Experimental value, Inhalation)</td>
</tr>
</tbody>
</table>
### ammonium chloride (12125-02-9)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>1410 mg/kg bodyweight (Other, Rat, Male / female, Experimental value, Oral)</td>
</tr>
<tr>
<td>LD50 dermal rat</td>
<td>&gt; 2000 mg/kg bodyweight (EU Method B.3: Acute toxicity (dermal), 24 h, Rat, Male / female, Experimental value, Dermal)</td>
</tr>
</tbody>
</table>

**Skin corrosion/irritation**
- Not classified

**Serious eye damage/irritation**
- Not classified

**Respiratory or skin sensitisation**
- Not classified

**Germ cell mutagenicity**
- Not classified

**Carcinogenicity**
- Not classified

**Respiratory or skin sensitisation**
- Not classified

**STOT-single exposure**
- Not classified

**STOT-repeated exposure**
- Not classified

**Aspiration hazard**
- Not classified

### 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

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50 fish 1</th>
<th>EC50 Daphnia 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium bicarbonate</td>
<td>7100 mg/l (EPA OPP 72-1, 96 h, Lepomis macrochirus, Flow-through system, Fresh water, Experimental value, GLP)</td>
<td>4100 mg/l (EPA OPP 72-2, 48 h, Daphnia magna, Flow-through system, Fresh water, Experimental value, GLP)</td>
</tr>
<tr>
<td>ammonium chloride</td>
<td>209 mg/l (96 h, Cyprinus carpio, Semi-static system, Fresh water, Experimental value)</td>
<td>101 mg/l (ASTM E729-80, 48 h, Daphnia magna, Static system, Fresh water, Experimental value)</td>
</tr>
</tbody>
</table>

#### 12.2. Persistence and degradability

**sodium bicarbonate (144-55-8)**
- Biodegradability: not applicable.
- ThOD: Not applicable (inorganic)

**ammonium chloride (12125-02-9)**
- Persistence and degradability: Biodegradability: not applicable.
- ThOD: Not applicable (inorganic)

#### 12.3. Bioaccumulative potential

**sodium bicarbonate (144-55-8)**
- Log Pow: -4.01 (Estimated value)

**ammonium chloride (12125-02-9)**
- Log Pow: -4.37 (Estimated value)

**Bioaccumulative potential**
- Not bioaccumulative.

#### 12.4. Mobility in soil

**sodium bicarbonate (144-55-8)**
- Ecology - soil: No (test)data on mobility of the substance available.

**ammonium chloride (12125-02-9)**
- Ecology - soil: No (test)data on mobility of the substance available.
12.5. Results of PBT and vPvB assessment

<table>
<thead>
<tr>
<th>Component</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>ammonium chloride (12125-02-9)</td>
<td>This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII</td>
</tr>
<tr>
<td></td>
<td>This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII</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

<table>
<thead>
<tr>
<th>UN-No. (ADR)</th>
<th>Not regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN-No. (IMDG)</td>
<td>Not regulated</td>
</tr>
<tr>
<td>UN-No. (IATA)</td>
<td>Not regulated</td>
</tr>
<tr>
<td>UN-No. (ADN)</td>
<td>Not regulated</td>
</tr>
<tr>
<td>UN-No. (RID)</td>
<td>Not regulated</td>
</tr>
</tbody>
</table>

14.2. UN proper shipping name

<table>
<thead>
<tr>
<th>Proper Shipping Name (ADR)</th>
<th>Not regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper Shipping Name (IMDG)</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Proper Shipping Name (IATA)</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Proper Shipping Name (ADN)</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Proper Shipping Name (RID)</td>
<td>Not regulated</td>
</tr>
</tbody>
</table>

14.3. Transport hazard class(es)

<table>
<thead>
<tr>
<th>ADR</th>
<th>Not regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMDG</td>
<td>Not regulated</td>
</tr>
<tr>
<td>IATA</td>
<td>Not regulated</td>
</tr>
<tr>
<td>ADN</td>
<td>Not regulated</td>
</tr>
<tr>
<td>RID</td>
<td>Not regulated</td>
</tr>
</tbody>
</table>

14.4. Packing group

<table>
<thead>
<tr>
<th>Packing group (ADR)</th>
<th>Not regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packing group (IMDG)</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Packing group (IATA)</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Packing group (ADN)</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Packing group (RID)</td>
<td>Not regulated</td>
</tr>
</tbody>
</table>

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 |
SECTION 15: Regulatory information

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

15.1.1. EU-Regulations
Contains no REACH substances with Annex XVII restrictions
Contains no substance on the REACH candidate list
Contains no REACH Annex XIV substances

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

Full text of H- and EUH-statements:

<table>
<thead>
<tr>
<th>Acute Tox. 4 (Oral)</th>
<th>Acute toxicity (oral), Category 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Irrit. 2</td>
<td>Serious eye damage/eye irritation, Category 2</td>
</tr>
<tr>
<td>H302</td>
<td>Harmful if swallowed.</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation.</td>
</tr>
</tbody>
</table>

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.