Ringer Salt Solution, Granulated

Intended Use:
Recommended an isotonic diluent for food, milk and dairy products during microbiological examination.

Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium chloride</td>
<td>8.500</td>
</tr>
<tr>
<td>Potassium chloride</td>
<td>0.200</td>
</tr>
<tr>
<td>Calcium chloride anhydrous</td>
<td>0.200</td>
</tr>
<tr>
<td>Sodium bicarbonate</td>
<td>0.010</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>7.0±0.2</td>
</tr>
</tbody>
</table>

**Formula adjusted, standardized to suit performance parameters

Directions
Suspend 8.91 grams in 1000 ml purified / distilled water. Heat if necessary to dissolve the medium completely. Dispense as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C.

Principle And Interpretation

Any diluent used in microbiological examination should be isotonic with the cells to be suspended. It should also preferably contain a buffer and certain ions necessary for the optimal maintenance of cells. Ringer Salt Solution Powder is recommended as an isotonic diluent for microbiological examination of foods (2,3).

Ringer Salt Solution is isotonic with bacteria and thus prevents them from being subjected to osmotic stress when they are removed from their customary environment. It is physiologically superior to physiological saline for sensitive organisms.

Ringer Salt Solution is used as an isotonic diluting fluid and suspending fluid which preserves the cells in their original condition. The salts in the medium balances the osmotic equilibrium of the medium, thereby protecting the organisms from osmotic stress caused due to change in environment.

Type of specimen
Food samples; Water samples

Specimen Collection and Handling:
For food samples, follow appropriate techniques for sample collection and processing as per guidelines (6).
For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (1).
After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions:
Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations:
1. It is physiologically superior to physiological saline for sensitive organisms.

Performance and Evaluation
Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.
Quality Control

Appearance
White to cream homogeneous free flowing powder

Colour and Clarity of prepared medium
Colourless clear solution without any precipitate

Reaction
Reaction of 0.891% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH
6.80-7.20

Cultural Response
Satisfactory results are obtained when used as a diluent during bacteriological examination of foods, milk, dairy products as well as for serial dilutions of pure cultures of bacteria.

Storage and Shelf Life
Store between 10-30°C in a tightly closed container and the prepared medium at 20-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Use before expiry date on the label.

Product performance is best if used within stated expiry period.

Disposal
User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (4,5).

Reference

Revision: 02 / 2019