# Technical Information

## Ringer Salt Solution, Granulated

## Product Code: GM 1525

**Application:** Ringer Salt Solution Granulated is recommended as an isotonic diluent for food, milk and dairy products during microbiological examinations.

## Composition**

| Ingredients | Gms / Litre |
|---|---|
| Sodium chloride | 8.500 |
| Potassium chloride | 0.200 |
| Calcium chloride | 0.200 |
| Sodium bicarbonate | 0.010 |
| Final pH ( at 25°C) | 7.0±0.2 |

**Formula adjusted, standardized to suit performance parameters

## Principle & 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.

## Methodology

Suspend 8.91 grams of powder media in 1000 ml distilled water. Shake well & heat if necessary to dissolve the medium completely. Dispense as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

## Quality Control

**Physical Appearance**
White to cream homogeneous free flowing powder

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

**Reaction**
Reaction of 0.89 1% w/v aqueous solution at 25°C. pH : 7.0±0.2

**pH range**
6.80-7.20

**Cultural Response/Characteristics**
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.

## Further Reading

1. Baird R.B., Eaton A.D., and Rice E.W., (Eds.), 2015, Standard Methods for the Examination of Water and Wastewater, 23rd ed., APHA, Washington, D.C.
2. Collee J. G., Fraser A. G., Marmion B. P., Simmons A., (Eds.), 1996,Mackie and McCartney, Practical Medical Microbiology, 14th Edition, Churchill Livingstone
3. Finegold S. M and Baron E. J, 1986, Bailey and Scotts Diagnostic Microbiology, 7th Edition, The C.V. Mosby Co.
4. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition
5. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
6. Salfinger Y., and Tortorello M.L., 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.

## Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
- The product conform solely to the technical information provided in this booklet and to the best of knowledge research and development work carried at **CDH** is true and accurate
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