

## Buffered Peptone Water (i23029)

For the preliminary, non-selective enrichment of bacteria, particularly pathogenic *Enterobacteriaceae*, from foodstuffs and other materials.

Industry: Cosmetics / Food / Water / Pharmaceutical / Veterinary

## Principles & Uses

Buffered Peptone Water is a versatile pre-enrichment medium recommended for *Salmonella* detection in food and water. It's endorsed by various ISO norms such as ISO 11133 / ISO 11290 / ISO 19250 / ISO 21528 / ISO 6579 / ISO 6887. This medium is crucial in detecting sublethally injured *Salmonella* in complex environments like the food industry, where processes like heat, pH changes, and desiccation can harm the bacteria. Buffered Peptone Water is rich in nutrients and fosters vigorous bacterial growth, making it effective in recovering damaged cells. It also maintains a stable pH, essential for repairing cells sensitive to low pH.

This pre-enrichment medium is a pivotal step in *Salmonella* detection because these bacteria are often present in low numbers alongside other microorganisms. The medium's phosphate buffer system prevents pH-induced bacterial damage. Components like peptone from enzymatic casein digestion, sodium chloride, and phosphate help in recovery and resuscitation. Buffered Peptone Water is also recommended as a diluent for microorganisms and *Listeria monocytogenes* enumeration.

In practical terms, specimens are inoculated into this medium and incubated. After pre-enrichment, a transfer to a selective medium is performed, followed by further incubation and subculture. This process helps identify characteristic *Salmonella* colonies efficiently.

## Composition (gr/L)

Peptone from Casein 10; Sodium Chloride 5; Disodium Hydrogen Phosphate 9; Potassium Dihydrogen Phosphate 1.5.

Final pH at 25°C 7.2 ± 0.2

## Preparation from dehydrated Powder

Add 25.5 g to 1 litre of distilled water. Mix well and distribute into final containers. Sterilise by autoclaving at 121°C for 15 minutes.

**Note:** It is extremely important that the distilled water used is of a high quality with a low mineral content/conductivity.

## Quality Control

Dehydrated Appearance: Cream-white to light beige, free flowing, homogeneous, free of extraneous material.

Prepared Appearance: Light amber, clear.

Reaction of 2.55% Solution at 25°C: pH 7.2 ± 0.2

## Cultural Response

characteristics were observed after incubation at 35 ± 2°C for 18-24 hours.

Organism (ATCC*)	Recovery
<i>Escherichia coli</i> (25922)	Good
<i>Salmonella enterica</i> subsp. <i>Enterica</i> serotype <i>Enteritidis</i> (13076)	Good
<i>Salmonella enterica</i> subsp. <i>Enterica</i> serotype <i>Typhimurium</i> (14028)	Good
<i>Salmonella enterica</i> subsp. <i>Enterica</i> serotype <i>Typhi</i> (19430)	Good
<i>Pseudomonas aeruginosa</i> (27853)	Good

\*ATCC is a registered trade mark of the American Type Culture Collection.



*P. aeruginosa* (left). *E. coli* (right)

## Storage

Keep the container at 15-30 °C. Store prepared medium at 2-8 °C.