Buffered Peptone Water BIS

Intended Use
A medium used for pre-enrichment of injured *Salmonella* species. It increases recovery of *Salmonella* species prior to selective enrichment from food in compliance with BIS specifications IS:5887(Part III)-1999.

Summary
Buffered Peptone Water (BPW) is one of the most widely used pre-enrichment broths for *Salmonella* in a wide range of foods. Moreover, it is often the medium of choice in many published reference methods, including the current International Organization for Standardization (ISO) method, for detection of *Salmonella* in foods.
Edel and Kampelmacher in their comparative study observed that food preservation methods cause sublethal injury to Salmonellae. It is known that freezing and drying may injure Salmonellae so that they are unable to multiply in selective media.
Pre-enrichment of sub lethally injured Salmonellae in buffered peptone water showed superior results in comparison with direct selection methods. In addition to providing conditions for the recovery and growth of cells prior to selective enrichment, BPW buffers the pH of the growth system against pH changes brought about by the growth and metabolism of microorganisms during enrichment and those imposed by the food sample.

Principle
Enzymatic digest of casein (Peptone) serves as a source of carbon, nitrogen, vitamins and minerals. Sodium chloride provides sodium ions for the membrane transport and maintains osmotic equilibrium of the medium. Phosphates buffer the medium.

Formula*

Ingredients	**g/L**
Enzymatic digest of casein (Peptone)	10.0
Sodium Chloride	5.0
Disodium Hydrogen Phosphate, Dodecahydrate ($Na_2HPO_4.12H_2O$)	9.0**
Potassium Dihydrogen Phosphate	1.5
Final pH (at 25°C)	7.0 ± 0.2

*Adjusted to suit performance parameters.
**9.0 g of $Na_2HPO_4.12H_2O$ is equivalent to 3.57 g of Na_2HPO_4 Anhydrous.

Storage and Stability
Store dehydrated medium below 30°C in tightly closed container and the prepared medium at 2ºC-8°C. Avoid freezing and overheating. Use before expiry date on the label. Once opened keep powdered medium closed to avoid hydration.

Type of specimen
Food and dairy samples.

Specimen Collection and Handling
Ensure that all samples are properly labelled.
Follow appropriate techniques for handling samples as per established guidelines.
Some samples may require special handling, such as immediate refrigeration or protection from light, follow the standard procedure.
The samples must be stored and tested within the permissible time duration.
After use, contaminated materials must be sterilized by autoclaving before discarding.

Directions

1. Suspend 20.07 g (Equivalent weight of dehydrated medium) of the powder in 1000 mL purified / distilled water.
2. Mix thoroughly.
3. Warm slightly with frequent agitation to dissolve the powder completely and dispense in 50 mL amounts.
4. Sterilize by autoclaving at 121°C (15 psi) for 20 minutes as per validated cycle.

Quality Control

Dehydrated Appearance: Cream to Light yellow coloured, homogenous, free flowing powder.
Prepared Appearance: Light yellow coloured, clear solution without any precipitate.
Growth Promotion Test: Growth promotion is carried out in accordance with the method of USP/EP/JP/IP and growth is observed after an incubation at 30°C-35°C for 18-24 hours.
Growth Promoting Properties: The test results observed are within the specified temperature and shortest period of time specified in the test, inoculating ≤ 100 cfu of appropriate microorganism at 30°C-35°C for 18 hours.

Organisms (ATCC)	**Growth**
Salmonella enterica subsp. *enterica* serovar *Abony* (NCTC 6017)	Good
Salmonella enterica subsp. *enterica* serovar *Typhimurium* (14028)	Good
Escherichia coli (25922)	Good

Note: Inoculum cfu for good growth is 10-100.

Interpretation of Results

Growth in the medium is indicated by the presence of turbidity compared to an uninoculated control.

Performance and Evaluation

Performance of the product is dependent on following parameters as per product label claim:

1. Directions
2. Storage
3. Expiry

Warranty

This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

Reference

1. Edel and Kampelmacher, 1973, Bull. W.H.O., 48:167.
2. Sadovski, 1977, J. Food Technol., 12:85.
3. Juven, Cox, Bailey, Thomson, Charles and Schutze, 1984, J. Food Prot., 47:299
4. Bureau of Indian Standards, IS : 5887 (Part III) 1999.
5. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	**Product description**	**Pack Size**
201020380100	Dehydrated Culture Media (BIS)	100 g
201020380500	Dehydrated Culture Media (BIS)	500 g