BUFFERED PEPTONE WATER ISO 6579, ISO 22964, ISO 6887, ISO 19250 / DIN 10181, 10160 / USP

CAT Nº: 1402

Recommended as a diluent for the homogenization of samples in the microbiological analysis of food

FORMULA IN g/l

Pancreatic Digest of Casein	10.00	Disodium Phosphate * Equivalent to 9.0 g of Disodium Hydrogen Phospate Dodecahydrate	3.50
Sodium Chloride	5.00	Monopotassium Phosphate	1.50

Final pH 7.0 ± 0.2 at 25ºC

PREPARATION

Suspend 20 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Dispense into appropriate containers and sterilize in autoclave at 121°C for 15 minutes. The prepared medium should be stored at 2-8°C. The color is very light amber.

The dehydrated medium should be homogeneous, free-flowing and white cream to slightly toasted in color. If there are any physical changes, discard the medium.

USES

BUFFERED PEPTONE WATER is a non-selective medium recommended as a preenrichment medium by the UNE-EN-ISO 6579 normative in food samples containing suspected contaminants such as *Salmonella,* in ISO 19250 normative in water samples and in ISO 22964 in milk and milk products for *Enterobacter sakazakii.*

Salmonella can be present in small numbers and are usually found with considerably larger numbers of other *Enterobacteriaceae* or other families. Pre-enrichment is necessary to allow the detection of small numbers of *Salmonella* or injured *Salmonella*.

A feature common to all selective media is that sublethally injured organisms are not generally detected and therefore a recovery step must be included in examination procedures. This is of importance, particularly in the food industry as various processes such as heat, desiccation, preservation processes, pH changes, etc, cause sublethal injuries to Salmonella. The broth is rich in nutrients and produces high resuscitation rates for sublethally injured bacteria and intense growth.

Changes in pH may cause damages to bacteria growth. Buffered Peptone Water maintains a high pH over the enrichment period via the phosphate buffer system and allows repair of injured cells sensitive to low pH. Pancreatic digest of casein provides nitrogen, vitamins, minerals and amino acids essential for growth. Sodium chloride supplies essential electrolytes for transport and osmotic balance.

The medium for *Salmonella* is designed for the selective enrichment with MKTTN Broth with Brilliant Green & Novobiocin (Cat.1173) and Rappaport Soy Broth (Vassiliadis) (ISO 6579) (Cat.1174). Inoculate and incubate at 37 ± 1°C for 18 ± 2 hours. And Rappaport Soy Broth (Vassiliadis) (ISO 19250)(Cat.1174). Inoculate and incubate at 36 ± 2°C for 18 ± 2 hours.

The medium for *Enterobacter sakazakii* must be used as a preenrichment before inoculating Lauryl Sulfate Trypthose Broth Modified (m LST) (Cat. 1445). Inoculate the Buffered peptone water at 37 ± 1°C for 18 ± 2 hours.

MICROBIOLOGICAL TEST

The following results were obtained in the performance of the medium from type cultures after incubation at a temperature of 37 ± 1°C and observed after 18 ± 2 hours.

Microorganisms	Growth	Inoculum (cfu/ml)
Salmonella enteritidis ATCC 13076	Good	$10\text{-}10^2$
Salmonella typhi ATCC 19430	Good	$10\text{-}10^2$
Salmonella typhimurium ATCC 14028	Good	$10\text{-}10^2$
Enterobacter sakazakii ATCC 29544	Good	$10\text{-}10^2$

According to ISO 11133 :

Microorganisms	International Standard	Incubation	Methods of control	Criteria
Escherichia coli ATCC 25922	ISO 6887	45 min – 1 h 20-ºC to 25ºC	Quantitative	± 30% colonies
Escherichia coli ATCC 8739	ISO 6887	45 min – 1 h 20-ºC to 25ºC	Quantitative	± 30% colonies
Staphylococcus aureus ATCC 25923	ISO 6887	45 min – 1 h 20-ºC to 25ºC	Quantitative	± 30% colonies
Listeria monocytogenes ATCC 13932	ISO 11290-2	1 h ± 5 min / 20 ± 2ºC	Quantitative	± 30% colonies
Listeria monocytogenes ATCC 35152	ISO 11290-2	1 h ± 5 min / 20 ± 2ºC	Quantitative	± 30% colonies
Salmonella thyphimurium ATCC 14028	ISO 6579/ ISO 21528-1	18 ± 2 h/ 37 ± 1ºC	Qualitative	Turbidity (2)
Salmonella enteriditidis ATCC 13076	ISO 6579	18 ± 2 h/ 37 ± 1ºC	Qualitative	Turbidity (2)
Escherichia coli ATCC 25922	ISO 21528-1	18 ± 2 h/ 37 ± 1ºC	Qualitative	Turbidity (2)
Escherichia coli ATCC 8739	ISO 21528-1	18 ± 2 h/ 37 ± 1ºC	Qualitative	Turbidity (2)

Reference media Agar TSA

BIBLIOGRAPHY

M.R. Pascual Anderson (1982) Techniques for Microbiological Analysis of Foods and Drinks, CeNAN.
Normative UNE-EN ISO 6579. Microbiology of food stuff for humans and animals. Horizontal method to detect *Salmonella spp*
ISO/TS 22964. Milk and milk products — Detection of *Enterobacter sakazakii*
ISO19250 Water quality-Detection of *Salmonella spp*

ISO

STORAGE

Once opened keep powdered medium closed to avoid hydration.