



# Technical Data

## Buffered HiCynth™ Peptone Water w/ NaCl

MCD1275

Buffered Peptone HiCynth™ Water with NaCl is recommended as a diluent for carrying microbial limit test from clinical and non-clinical specimens.

### Composition\*\*

Ingredients	Gms / Litre
HiCynth™ Peptone No.1*	1.000
Potassium dihydrogen phosphate	3.560
Disodium hydrogen phosphate	7.230
Sodium chloride	4.300
Final pH ( at 25°C)	7.0±0.2

\*\*Formula adjusted, standardized to suit performance parameters

\*Chemically defined peptone

### Directions

Suspend 16.09 grams in 1000 ml distilled water. Add 0.1 to 1% w/v polysorbate 20 or 80 if desired. Heat if necessary to dissolve the medium completely. Dispense in tube or flasks as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

### Principle And Interpretation

Buffered HiCynth™ Peptone Water is a pre-enrichment medium designed to help recovery of sub-lethally damaged *Salmonellae* before transfer to a selective medium. This is prepared by completely replacing animal or vegetable peptones with chemically defined peptones to avoid BSE/TSE risks associated with animal peptone. This pre-enrichment medium is free from inhibitors and is well buffered and provides conditions for resuscitation of the cells that have been injured by processes of food preservation. It was noted by Edel and Kampelmacher (1) that sub-lethal injury to *Salmonella* may occur due to food preservation techniques involving heat, desiccation, high osmotic pressure, preservatives or pH changes. Buffered Peptone Water during the pre-enrichment period helps in recovery of injured cells that may be sensitive to low pH (2). This is particularly important for vegetable specimens, which have low buffering capacity. These media can be used for testing dry poultry feed (3). In a survey involving isolation of *Salmonellae* from meat that had been artificially contaminated with sub-lethally injured organisms. Pre-enrichment in Buffered HiCynth™ Peptone Water w/NaCl before selection in Tetrathionate Brilliant Green HiCynth™ Broth (MCD1255) showed superior results compared with direct selection method.

Lactose Broth is frequently used as a pre-enrichment medium but it may be detrimental to recovery of *Salmonellae* (4). The sample for microbial examination is recommended to be diluted depending on the amount of fat in the sample to examine the kind and quantity of emulsifying agent to be used.

These pre-enrichment media contain HiCynth™ Peptone No.1 as a source of carbon, long chain amino acids nitrogen, vitamins and minerals. Sodium chloride maintains the osmotic balance and phosphates buffer the medium. The broth is rich in nutrients and produces high resuscitation rates for sublethally injured bacteria and supports intense growth. The phosphate buffer system prevents bacterial damage due to changes in the pH of the medium. Inoculate 10 grams specimen in 50 ml of these media and incubate at 35-37°C for 18 hours. Transfer 10 ml from this medium to 100 ml of Tetrathionate HiCynth™ Broth Base w/o Iodine and BG (MCD032) and incubate at 43°C for 24-48 hours and then subculture on selective plating media. Examine the plates for characteristic *Salmonella* colonies.

### Quality Control

#### Appearance

White to cream homogeneous free flowing powder

#### Colour and Clarity of prepared medium

Colourless clear solution without any precipitate

Please refer disclaimer Overleaf.

**Reaction**

pH of 1.61% w/v aqueous solution at 25°C .

**pH**

6.80-7.20

**Cultural response**

Cultural characteristics observed after recovery on Soybean Casein Digest Agar after an incubation at 30-35°C for 18-24 hours for bacteria and Sabouraud Dextrose Agar at 30-35°C for 24-48 hours .

<b>Organism</b>	<b>Inoculum (CFU)</b>	<b>Recovery within 2 hours of incubation</b>	<b>Recovery within 4 hours of incubation</b>	<b>Recovery within 24 hours of incubation</b>
<b>Preparation of test strain</b>				
<i>Escherichia coli</i> ATCC 8739	50 -100	no decrease in colony count	no decrease in colony count	no decrease in colony count (stored at 2-8°C)
<i>Escherichia coli</i> ATCC 25922	50 -100	no decrease in colony count	no decrease in colony count	no decrease in colony count (stored at 2-8°C)
<i>Escherichia coli</i> NCTC 9002	50 -100	no decrease in colony count	no decrease in colony count	no decrease in colony count (stored at 2-8°C)
<i>Staphylococcus aureus</i> ATCC 6538	50 -100	no decrease in colony count	no decrease in colony count	no decrease in colony count (stored at 2-8°C)
<i>Staphylococcus aureus</i> ATCC 25923	50 -100	no decrease in colony count	no decrease in colony count	no decrease in colony count (stored at 2-8°C)
<i>Pseudomonas aeruginosa</i> ATCC 9027	50 -100	no decrease in colony count	no decrease in colony count	no decrease in colony count (stored at 2-8°C)
<i>Pseudomonas aeruginosa</i> ATCC 27853	50 -100	no decrease in colony count	no decrease in colony count	no decrease in colony count (stored at 2-8°C)
<i>Salmonella</i> Typhimurium ATCC 14028	50 -100	no decrease in colony count	no decrease in colony count	no decrease in colony count (stored at 2-8°C)
<i>Salmonella</i> Abony NCTC 6017	50 -100	no decrease in colony count	no decrease in colony count	no decrease in colony count (stored at 2-8°C)
<i>Bacillus subtilis</i> ATCC 6633	50 -100	no decrease in colony count	no decrease in colony count	no decrease in colony count (stored at 2-8°C)
<i>Micrococcus luteus</i> ATCC 9341	50 -100	no decrease in colony count	no decrease in colony count	no decrease in colony count (stored at 2-8°C)

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<i>Candida albicans</i> ATCC 10231	50 -100	no decrease in colony count	no decrease in colony count	no decrease in colony count (stored at 2-8°C)
<i>Candida albicans</i> ATCC 2091	50 -100	no decrease in colony count	no decrease in colony count	no decrease in colony count (stored at 2-8°C)

### Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium between 2-8°C. Use before expiry date on the label.

### 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. Angelotti, 1963, Academic Press, New York, N.Y.

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