TM 687 – BUFFERED PEPTONE WATER W/ NaCl (as per IP)

INTENDED USE

Used as diluents for carrying out microbial limit test.

PRODUCT SUMMARY AND EXPLANATION

Buffered Peptone Water is a pre-enrichment medium designed to help recovery of sub-lethally damaged Salmonellae before transfer to a selective medium. 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 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. This is particularly important for vegetable specimens, which have low buffering capacity. These media can be used for testing dry poultry feed. In a survey involving isolation of Salmonellae from meat that had been artificially contaminated with sub-lethally injured organisms. Pre-enrichment in Buffered Peptone Water at 37°C for 18 hours before selection in Tetrathionate Brilliant Green Bile Broth 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. The composition of Buffered Peptone Water with NaCl medium is as per IP and EP specifications recommended to dilute the sample for microbial examination. Depending on the amount of fat in the sample to examine the kind and quantity of emulsifying agent to be used.

Inoculate 10 grams of 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 Broth and incubate at 43°C for 24-48 hours and then subculture on selective plating media. Examine the plates for characteristic *Salmonella* colonies.

COMPOSITION

Ingredients	Gms / Ltr
Peptone	1.000
Potassium dihydrogen phosphate	3.560
Disodium hydrogen phosphate	7.230
Sodium chloride	4.300

PRINCIPLE

These pre-enrichment media contain peptone as a source of carbon, 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 sub lethally injured bacteria and supports intense growth. The phosphate buffer system prevents bacterial damage due to changes in the pH of the medium.

INSTRUCTION FOR USE

- Dissolve 16.09 grams in 1000 ml purified/distilled water.
- Heat if necessary to dissolve the medium completely.
- Add 0.1 to 1% w/v polysorbate 20 or 80 if desired (depending on the type of food to be diluted).
- Dispense in tubes or flasks as desired.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : White to cream homogeneous free flowing powder.
Appearance of prepared medium : Colourless to pale yellow clear solution without any precipitate.
pH (at 25°C) : 7.0±0.2

INTERPRETATION

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.

Microorganism	ATCC	Inoculum (CFU/ml)	Recovery within 2 hours of incubation	Recovery within 4 hours of incubation	Recovery within 24 hours of incubation
Escherichia coli	8739	50 -100	No decrease in colony count	No decrease in colony count	No decrease in colony count (stored at 2-8°C)
Escherichia coli	25922	50 -100	No decrease in colony count	No decrease in colony count	No decrease in colony count (stored at 2-8°C)
Staphylococcus aureus subsp. aureus	6538	50 -100	No decrease in colony count	No decrease in colony count	No decrease in colony count (stored at 2-8°C)
Staphylococcus aureus subsp. aureus	25923	50 -100	No decrease in colony count	No decrease in colony count	No decrease in colony count (stored at 2-8°C)
Pseudomonas aeruginosa	9027	50 -100	No decrease in colony count	No decrease in colony count	No decrease in colony count (stored at 2-8°C)
Pseudomonas aeruginosa	27853	50 -100	No decrease in colony count	No decrease in colony count	No decrease in colony count (stored at 2-8°C)
Salmonella Typhimurium	14028	50 -100	No decrease in colony count	No decrease in colony count	No decrease in colony count (stored at 2-8°C)
Bacillus subtilis subsp. spizizenni	6633	50 -100	No decrease in colony count	No decrease in colony count	No decrease in colony count (stored at 2-8°C)
Micrococcus luteus	9341	50 -100	No decrease in colony count	No decrease in colony count	No decrease in colony count (stored at 2-8°C)

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

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5. Sadovski, 1977, J. Food Technol., 12:85.
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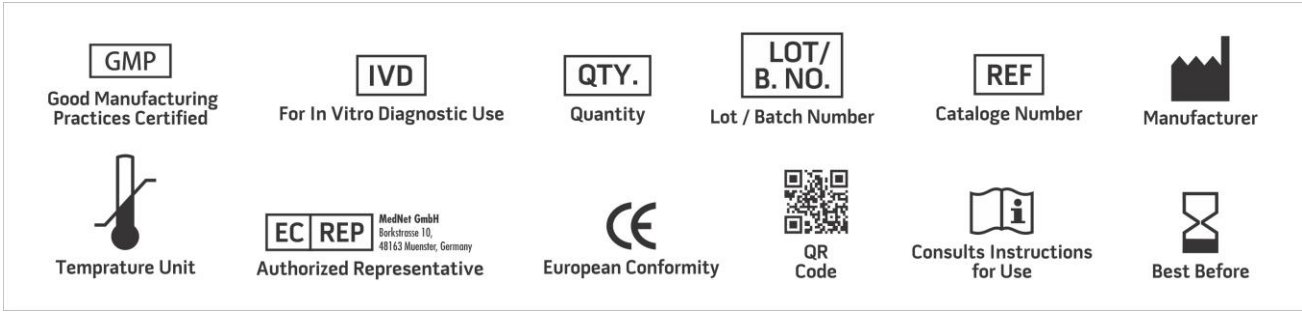

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**

Revision: 08 Nov., 2019