

Buffered Peptone Water (BPW) (NCM0003)

Intended Use

Buffered Peptone Water (BPW) is used for the non-selective pre-enrichment of *Salmonella* spp. from food and is not intended for use in the diagnosis of disease or other conditions in humans.

Description

Edel and Kamelmacher found that food preservation techniques involving heat, desiccation, preservatives, high osmotic pressure, or pH changes cause sublethal injury to *Salmonella* spp. Pre-enrichment in a non-selective medium allows for repair of cell damage and facilitates the recovery of *Salmonella*. Lactose Broth is frequently used for this purpose, but it may be detrimental to recovering *Salmonellae*. Buffered Peptone Water maintains a high pH over the pre-enrichment period and allows in repair of injured cells that may be sensitive to low pH. This is particularly important for vegetable specimens which have a low buffering capacity. Buffered Peptone Water is used in standard methods.

Typical Formulation

| | |
|---|----------|
| Enzymatic Digest of Casein | 10.0 g/L |
| Sodium Chloride | 5.0 g/L |
| Disodium Hydrogen Phosphate (anhydrous) | 3.5 g/L |
| Potassium Dihydrogen Phosphate | 1.5 g/L |
| Final pH: 7.2 ± 0.2 at 25°C | |

Formula may be adjusted and/or supplemented as required to meet performance specifications.

Precaution

Refer to SDS

Preparation

1. Dissolve 20 g of the medium in one liter of purified water.
2. Mix thoroughly.
3. Autoclave at 121°C for 15 minutes.

Test Procedure

Refer to appropriate references for specific procedures using Buffered Peptone Water.

Quality Control Specifications

Dehydrated Appearance: Powder is homogeneous, free flowing, and white to light beige.

Prepared Appearance: Prepared medium is clear, with no to light precipitate and colorless to yellow.

Expected Cultural Response: Cultural response in Buffered Peptone Water incubated aerobically at 33-38°C and examined for growth after 18 - 24 hours incubation.

| Microorganism | Approx. Inoculum (CFU) | Expected Growth |
|---|------------------------|-----------------|
| <i>Escherichia coli</i> ATCC® 25922 | 10-100 | Good growth |
| <i>Escherichia coli</i> ATCC® 8739 | 10-100 | Good growth |
| <i>Salmonella typhimurium</i> ATCC® 14028 | 10-100 | Good growth |
| <i>Salmonella enteritidis</i> ATCC® 13076 | 10-100 | Good growth |

The organisms listed are the minimum that should be used for quality control testing.

Technical Specification Sheet



Results

Growth is indicated by turbidity.

Expiration

Refer to expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitation of the Procedure

Due to nutritional variation, some strains may be encountered that grow poorly or fail to grow on this medium.

Storage

Store dehydrated culture media at 2 – 30°C away from direct sunlight. Once opened and recapped, place the container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

References

1. Edel, W., and E. H. Kampelmacher. 1973. Bull World Hlth. Org. 48:167-174.
2. Angelotti, R. 1963. Microbiological quality of foods. Academic Press, New York.
3. Sadovski, A. Y. 1977. J. Food Technol. 12:85-91.
4. Vanderzant, C., and D. F. Splittstoesser (eds.). 2015. Compendium of methods for the microbiological examination of foods, 4th ed. American Public Health Association, Washington, D.C.

Effective Date: 3/11/2020

Revision: 1



620 Leshar Place • Lansing, MI 48912
800-234-5333 (USA/Canada) • 517-372-9200
foodsafety@neogen.com • foodsafety.neogen.com