# PRODUCT SPECIFICATION SHEET

## Buffered Peptone Water (DM049)

**Intended Use**
Buffered Peptone Water (DM049) is used for pre-enrichment of injured *Salmonella* species from foods, prior to selective enrichment and isolation.

**Product Summary and Explanation**
It was noted by Edel and Kampelmacher[1] that sublethal injury to salmonellae may occur in many food processes. In a survey involving isolation of salmonellae from meat that had been artificially contaminated with sublethally injured organisms, 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 Salmonella[2]. 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.[3] This is particularly important for vegetable specimens which have a low buffering capacity. Sadovski[7] reported that in experiments involving isolation of *Salmonellae* from frozen vegetable the rapid drop in pH when using lactose broth[8]as a per-enrichment medium was detrimental to the recovery of salmonellae. This was due to the enhanced sensitivity to low pH of freeze-injured salmonellae which may contaminate frozen vegetables. Pre-enrichment with buffered peptone water maintained a high pH over a period of 24 hours incubation. Vegetable tissue has a low buffering capacity and the medium overcame this problems. Buffered Peptone Water is a standard methods medium.[5] and can be used for testing dry poultry feed.[4]

**Principles of the Procedure**
Buffered Peptone Water contains Proteose peptone as a source of carbon, nitrogen, vitamins, and minerals. Sodium Chloride maintains the osmotic balance. Phosphates buffer the medium.

**Formula / Liter**

| Ingredients | Gms / Litre |
|---|---|
| Proteose peptone | 10.00 |
| Sodium chloride | 5.00 |
| Disodium phosphate, anhydrous | 3.50 |
| Monopotassium phosphate | 1.50 |
| Final pH: 7.2 ± 0.2 at 25°C | |
| Formula may be adjusted and/or supplemented as required to meet performance specifications | |

**Precautions**
1. For Laboratory Use only.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

**Directions**
1. Suspend 20 g of the medium in one liter of distilled water.
2. Heat if necessary, to dissolve the medium completely. Distribute into tubes in 50ml amounts.
3. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.

**Quality Control Specifications**

| | |
|---|---|
| **Dehydrated Appearance** | Cream to yellow colored, homogeneous, free flowing powder |
| **Prepared Medium** | Light yellow colored clear solution without any precipitate |

# PRODUCT SPECIFICATION SHEET

| | |
|---|---|
| **Reaction of 2.0% Solution** | pH 7.2 ± 0.2 at 25°C |
| **Gel Strength** | Not Applicable |

**Expected Cultural Response:** Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours. (Recovery is carried out using XLD Agar, DM297)

| Sr. No. | Organisms | Results to be achieved | | |
|---|---|---|---|---|
| | | Inoculums (CFU) | Growth | Recovery |
| 1. | *Salmonella Enteritidis ATCC 13076* | 50 -100 | Good-luxuriant | >=50% |
| 2. | *Salmonella Typhi ATCC 6539* | 50 -100 | Good-luxuriant | >=50% |
| 3. | *Salmonella Typhimurium ATCC 14028* | 50 -100 | Good-luxuriant | >=50% |

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

**Test Procedure**

**Technique for the isolation of Salmonella**

1. Add 10g of sample to 50ml of Buffered Peptone Water and mix thoroughly.
2. Incubate at 35°C for 18 hours.
3. Add 10 ml incubated Buffered Peptone Water to 100ml of Muller-Kaufmann Tetrathionate Broth (DM1105).
4. Incubate at 43°C.
5. Subculture on Brilliant Green Agar (DM043) or Brilliant Green Agar, Modified (DM044), after 24 to 48 hours incubation.
6. Incubate the Brilliant Green Agar plates at 35°C for 18 hours.
7. Examine the plates for colonies of Salmonella spp.

**Results**

After incubation record growth of organism as follows:

1. Growth in tubes is indicated by turbidity compared to an un-inoculated tube (control).
2. Growth from the enrichment broth is used for plating on selective media.
3. Prolonged incubation will result in growth of the suppressed contaminating organisms to develop[6].

**Storage**

Store the sealed bottle containing the dehydrated medium at 10 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light.

**Expiration**

Refer to the 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.

**Limitations of the Procedure**

1. For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
2. Liquid cultures are more infective then plates and special care should be taken if the 43°C incubation takes place in a water bath.
3. Consult appropriate texts for detailed information and recommended procedures.

# PRODUCT SPECIFICATION SHEET

**Packaging**
**Product Name: Buffered Peptone Water**
**Product Code: DM049**
**Available Pack sizes: 100gm / 500gm**

**References**


1. Edel W. and Kampelmacher E.H.(1973) Bull.Wld 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. Juven, B. J.,N.A. Cox, J.S. Bailey, J.E. Thomsom,O.W. Charles,and J.V.Schutze.1984. Recovery of Salmonella from artificially contaminated poultry feeds in non-selective and selective broth media.Jour. of food Prot.47:299-302.
5. Flowers,R.S., J-Y.D'Aoust,W.H. Andrews, and J.S. Bailey, 1992. Salmonella, p. 371-422. In C. Vanderzant,D. F. Splittstoesser(ed). Compedium of methods for the microbiological examination of foods, 3rd ed. American Public Health Association, Washington D.C.
6. American Public Association (1976) Compendium of Methods for the Microbiological Examination of Foods. A.P.H.A. Inc.Washington D.C.
7. SadovskiA.Y. (1977) J.Food Technol.12.85-91.
8. Angelotti R. (1963) Microbiological Quality of foods Academic Press, New York,p.149.


**Further Information**

For further information please contact your local MICROMASTER Representative.


**MICROMASTER LABORATORIES PRIVATE LIMITED**
Unit 38/39, Kalpataru Industrial Estate,
Off G.B. Road, Near 'R-Mall' , Thane (W) – 400607. M.S. INDIA.
Ph: +91-22-25895505, 4760, 4681. Cell: 9320126789.
Email: micromaster@micromasterlab.com
sales@micromasterlab.com


DM049PSS, QAD/FR/024,Rev.00/01.01.2018

| | Checked By | Approved By |
|---|---|---|
| Microbiologist | Head Quality Control | Head Quality Assurance |