Buffered Peptone Water

**DM 494** A pre-enrichment medium designed to increase the recovery of sub-lethally injured *Salmonella* spp. prior to selective enrichment and isolation.

**Typical formula*** grams per litre

<table>
<thead>
<tr>
<th>Component</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Peptone mixture</td>
<td>10.0</td>
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<tr>
<td>Sodium chloride</td>
<td>5.0</td>
</tr>
<tr>
<td>Di-Sodium hydrogen phosphate</td>
<td>3.5</td>
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<tr>
<td>Potassium di-hydrogen phosphate</td>
<td>1.5</td>
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</tbody>
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pH approx. 7.2

**Directions**

1. Suspend by swirling 20g of powder in 1 litre or the contents of the sachet in the stated volume of distilled or deionised water.
2. Mix well and distribute 50ml or 225ml volumes, according to method chosen, into final containers.
3. Autoclave at 121°C (15p.s.i.) for 15 minutes.

**Description**

MAST Buffered Peptone Water (DM494) is intended to be used as a pre-enrichment medium, prior to selective enrichment, in the isolation of *Salmonella* spp. from food. It is particularly valuable for the resuscitation of cells injured during food preservation processes.¹

This was confirmed by Sadovski² who recommended Buffered Peptone Water as a pre-enrichment medium for use with frozen vegetable samples, to overcome problems encountered through the increased acid sensitivity of freeze injured salmonellae and to counteract the low buffering capacity of vegetable tissue.

After pre-enrichment, samples are transferred to enrichment broth for further incubation. Pietzsch recommended Tetrathionate broth³ but later work by Vassiliadis⁴ found Rappaport-Vassiliadis Broth (DM269) superior for the isolation of *Salmonella* spp. from both food and environmental samples.

**In Use**

1. **Tetrathionate Broth Enrichment**
   Asceptically inoculate 10ml of test material into 50ml of MAST Buffered Peptone Water.
   Incubate at 37°C for 18-24 hours. Transfer 10ml to 100ml of Mueller-Kaufmann Tetrathionate Broth.
   Incubate at 43°C and subculture to MAST Brilliant Green Agar (DM105) after 24 and 48 hours.

2. **Rappaport Vassiliades Broth Enrichment**
   Add 25g or 25ml of food or environmental samples to 225ml of MAST Buffered Peptone Water.
   Incubate at 37°C for 18-20 hours. Transfer 0.1ml to 10ml of MAST Buffered Rappaport Vassiliadis Broth (DM269).
   Incubate at 42°C ± 1.0°C and subculture to MAST Brilliant Green Agar (DM105-1 or DM105-2) at 24 hours.

   For both methods, incubate Brilliant Green Agar plates at 37°C for 18-24 hours and examine for colonies of *Salmonella* spp. Suspect colonies should be confirmed by biochemistry or serology.

**References**