Thiostarch Broth

Thiostarch Broth is used for sterility testing of pharmaceutical or biological products.

### Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Casein enzymic hydrolysate</td>
<td>15.000</td>
</tr>
<tr>
<td>Yeast extract</td>
<td>5.000</td>
</tr>
<tr>
<td>L-Cystine</td>
<td>0.500</td>
</tr>
<tr>
<td>Dextrose</td>
<td>5.000</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>2.500</td>
</tr>
<tr>
<td>Sodium thioglycollate</td>
<td>0.500</td>
</tr>
<tr>
<td>Soluble starch</td>
<td>1.000</td>
</tr>
<tr>
<td>Resazurin</td>
<td>0.001</td>
</tr>
<tr>
<td>Agar</td>
<td>0.750</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>7.1±0.2</td>
</tr>
</tbody>
</table>

**Formula adjusted, standardized to suit performance parameters

### Directions

Suspend 30.25 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Dispense in test tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 20 minutes.

### Principle And Interpretation

Brewer (1) formulated Fluid Thioglycollate Medium for rapid cultivation of aerobes as well as anaerobes including microaerophiles by adding a reducing agent and small amount of agar. The USP (2), BP (3), EP (4) and AOAC (5) have recommended the media for sterility testing of antibiotics, biologicals and foods and for determining the phenol coefficient and sporicidal effect of disinfectants. However, it is intended for the examination of clear liquid or water-soluble materials. Fluid Thioglycollate Medium is also routinely used to check the sterility of stored blood in blood banks (6). Thiostarch Broth is a slight modification of Fluid Thioglycollate Medium. It additionally contains soluble starch which neutralizes the toxic effects.

Casein, enzymic hydrolysate, yeast extract, L-cysteine provide nitrogen source and growth factor for bacterial growth. Sodium thioglycollate and L-cystine are reducing agents, maintains low redox potential and support anaerobiosis and thus allows *Clostridium* to grow in the medium even under aerobic conditions(7). Resazurin is an oxidation-reduction indicator being pink when oxidized and colourless when reduced. Small amount of agar assists in the maintenance of a anaerobiosis in the lower depths of the medium.

### Quality Control

#### Appearance
Cream to pink coloured homogeneous free flowing powder

#### Colour and Clarity of prepared medium
Light straw coloured upper 10% or less medium pink on standing, clear to slightly opalescent.

#### Reaction
Reaction of 3.03% w/v aqueous solution at 25°C. pH : 7.1±0.2

#### pH
6.90-7.30

#### Cultural Response
M193: Cultural characteristics observed after an incubation at 35 - 37°C for 18 - 48 hours.

<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth</th>
</tr>
</thead>
</table>

Please refer disclaimer Overleaf.
Bacillus subtilis ATCC 6633  50-100  luxuriant
Candida albicans ATCC 10231  50-100  luxuriant
Clostridium sporogenes ATCC 11437  50-100  luxuriant
Micrococcus luteus ATCC 10240  50-100  luxuriant
Streptococcus pyogenes ATCC 19615  50-100  luxuriant

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

Reference