



## Tryptone Soya Agar w/ Magnesium Sulphate (TSAM)

M990

Tryptone Soya Agar w/ Magnesium Sulphate is recommended for cultivation of coliforms in accordance with AOAC.

### Composition\*\*

Ingredients	Gms / Litre
Casein enzymic hydrolysate	15.000
Peptic digest of animal tissue	5.000
Sodium chloride	5.000
Magnesium sulphate	1.500
Agar	15.000
Final pH ( at 25°C)	7.3±0.2

\*\*Formula adjusted, standardized to suit performance parameters

### Directions

Suspend 41.5 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and pour into sterile Petri plates.

### Principle And Interpretation

The faecal coliform group is restricted to organisms that grow in the gastrointestinal tract of human and warm-blooded animals. It includes members of at least three genera : *Escherichia* , *Klebsiella* and *Enterobacter* .

Tryptone Soya Agar with Magnesium Sulphate (TSAM) is used for the enumeration of coliform bacteria by hydrophobic grid membrane filter (HGMF) (1). The membrane filter is imprinted with hydrophobic material in grid pattern. The hydrophobic lines act as barriers to spread the colonies, thereby dividing membrane filter surface into separate compartments of equal and known size. HGMF membrane filters has pore size of 0.45 mm.

Casein enzymic hydrolysate and peptic digest of animal tissue provide the necessary nutrients to the organisms. Sodium chloride maintains osmotic equilibrium while magnesium sulphate enhances maximum recovery of the coliform bacteria on membrane filters. For *E.coli* / coliform counts place HGMF on surface of pre-dried Tryptone Soya Agar with Magnesium Sulphate. Incubate at 25°C for 4-5 hours for dry foods and 4-5 hrs at 35°C for all other foods. The membrane is placed on the surface of other differential / selective medium after pre-incubation on TSAM, to enable detection of coliforms (2, 3).

### Quality Control

#### Appearance

Cream to yellow homogeneous free flowing powder

#### Gelling

Firm, comparable with 1.5% Agar gel

#### Colour and Clarity of prepared medium

Yellow coloured clear to slightly opalescent gel forms in Petri plates.

#### Reaction

Reaction of 4.15% w/v aqueous solution at 25°C. pH : 7.3±0.2

#### pH

7.10-7.50

#### Cultural Response

M990: Cultural characteristics observed after an incubation at different temperatures for 22-24 hours.

Organism	Inoculum (CFU)	Growth at 35-37°C	Growth at 44-46°C
<i>Escherichia coli</i> ATCC 25922	50-100	luxuriant	luxuriant

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<i>Enterococcus faecalis</i> ATCC 50-100 29212		luxuriant	inhibited
<i>Salmonella Typhimurium</i> ATCC 14028	50-100	luxuriant	inhibited
<i>Shigella flexneri</i> ATCC 12022	50-100	luxuriant	inhibited

### 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

1. Official Methods of Analysis of AOAC International 16th Edition, Vol. 1, 1995.
2. J. AOAC, 1983, 66:897.
3. J. AOAC, 1984, 67:812.

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