



## Modified Tergitol 7 Agar Base w/ 1.0% Agar

M1699

Modified Tergitol Agar Base w/1.0% Agar is used for the detection and enumeration of coliform and heat-tolerant bacteria in water from different sources by membrane filter method.

### Composition\*\*

Ingredients	Gms / Litre
Peptic digest of animal tissue	10.000
Yeast extract	6.000
Meat extract	5.000
Lactose	20.000
Tergitol 7	0.100
Bromothymol blue	0.050
Agar	10.000
Final pH ( at 25°C)	7.2±0.2

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

### Directions

Suspend 51.15 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. Cool to 45-50°C. Add 2.5 ml of 1% 2,3,5 Triphenyl Tetrazolium Chloride (TTC) (FD057). Mix well and pour into sterile Petri plates.

### Principle And Interpretation

Tergitol 7 Agar is a selective and differential medium for the detection and enumeration of coliforms in water. Chapman (1,2) modified his original formula of Tergitol 7 Agar by addition of Triphenyl Tetrazolium Chloride (TTC). Media with similar composition (with 15- 25 grams agar) is also recommended by ISO Committee (3).

Tergitol 7 acts as a selective agent (4) which inhibits gram positive organisms and minimises swarming of *Proteus* species enabling better coliform recovery. Lactose fermentation is observed by change in colour of bromo thymol blue, the pH indicator. Triphenyl Tetrazolium Chloride (TTC) allows earlier recognition and identification of *Escherichia coli* and *Enterobacter aerogenes* in water and food (5). TTC is rapidly reduced by coliforms except *Escherichia coli* and *Enterobacter aerogenes* to insoluble formazan which gives red colour to the colonies. The lactose fermenters show greenish yellow colonies with yellow zones while lactose non-fermenters show red colonies surrounded by blue zones.

### Quality Control

#### Appearance

Cream to pale green homogeneous free flowing powder

#### Gelling

Firm, comparable with 1.0% Agar gel

#### Colour and Clarity of prepared medium

Green coloured, clear to slightly opalescent gel forms in Petri plates

#### Reaction

Reaction of 5.1% w/v aqueous solution at 25°C. pH : 7.2±0.2

#### pH

7.00-7.40

#### Cultural Response

M1699: Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours .

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony ( on plain medium)	Colour of colony (on medium with 1% TTC)

**Cultural Response**

<i>Enterobacter aerogenes</i> ATCC 13048	50-100	luxuriant	>=50%	yellow	reddish brown
<i>Escherichia coli</i> ATCC 25922	50-100	luxuriant	>=50%	yellow	yellow with red centre
<i>Proteus vulgaris</i> ATCC 13315	50-100	good	40-50%	colourless with blue zone	red with bluish zone
<i>Pseudomonas aeruginosa</i> ATCC 27853	50-100	good	40-50%	colourless with blue zone	red
<i>Salmonella Typhimurium</i> ATCC 14028	50-100	luxuriant	>=50%	colourless with blue zone	red with bluish zone
<i>Staphylococcus aureus</i> ATCC 25923	>=10 <sup>3</sup>	inhibited	0%		
<i>Klebsiella pneumoniae</i> ATCC 13883	50-100	luxuriant	>=50%	yellow	yellow with red centre

**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.Chapman G.H., 1947, J. Bact., 53:504.
- 2.Chapman G.H., 1951, Am. J. Public Health, 41:1381.
- 3.International Organization For Standardization (ISO), 1990, Draft ISO/DIS 9308-1.
- 4.Pollard A.L., 1946, Science., 103:758.
- 5.Mossel D.A.A., 1962, J. Appl. Bact., 25:20.

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