



# PRODUCT SPECIFICATION SHEET

## Modified Tergitol Agar Base w/ 1.0 % Agar (DM1740)

### Intended Use

Modified Tergitol Agar Base w/ 1.0 % Agar (DM1740) is recommended for detection and enumeration of coliforms and heat-tolerant bacteria in water from different sources by MF technique.

### Product Summary and Explanation

Tergitol-7 Agar is based on the formulation described by Chapman<sup>(1)</sup> and is recommended for the selective isolation and differentiation of the coliform group. Chapman<sup>(1,2)</sup> formulated Modified Tergitol Agar Base w/ 1.0 % Agar by addition of Triphenyl Tetrazolium Chloride (TTC) to his original formula of Tergitol 7 Agar. Media with similar composition (with 15-25 grams agar) is also recommended by ISO Committee.<sup>(3)</sup> The addition of tri-phenyltetrazolium chloride (TTC) allows earlier recognition and identification of *Escherichia coli* and *Enterobacter aerogenes*.<sup>(4)</sup> Confirmation of the presence of *E. coli* was possible after only 10 hours incubation at 35°C. Chapman also reported that Tergitol-7 Agar with added TTC gave a selective medium suitable for the isolation of *Candida* spp. and other fungi. Tergitol-7 inhibits Gram positive organisms and minimises the swarming of *Proteus* allowing superior recovery of coliforms.<sup>(5)</sup> TTC is rapidly reduced to insoluble red formazan by most coliform organisms except *E. coli* and *Enterobacter aerogenes*, thus allowing easy differentiation.

### Principles of the Procedure

Modified Tergitol Agar Base w/ 1.0 % Agar contains peptic digest of animal tissue and meat extract which serves as sources of carbon, nitrogen and other essential growth nutrients. Yeast extract provides vitamin B complex required for growth. Lactose is the fermentable carbohydrate. Lactose fermentation is indicated by a color change of the pH indicator, Bromthymol Blue. Sodium heptadecyl sulphate (Tergitol-7) inhibits gram-positive bacteria and *Proteus* swarming and yields better recovery of coliforms.

### Formula / Liter

Ingredients	Gms / Liter
Peptic digest of animal tissue	10.00
Yeast extract	6.00
Meat extract	5.00
Lactose	20.00
Tergitol 7	0.10
Bromothymol blue	0.05
Agar	10.00
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 51.15 grams of the medium in one liter of distilled water.
2. Heat to boiling to dissolve the medium completely.
3. Sterilize by autoclaving at 121°C, 15 psi pressure, for 15 minutes / validated cycle.
4. Cool to 45-50°C. Add 2.5 ml of 1% 2,3,5 Triphenyl Tetrazolium Chloride (TTC) (MS029).
5. Mix well and pour into sterile Petri plates.



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## Quality Control Specifications

<b>Dehydrated Appearance</b>	Cream to pale green homogeneous free flowing powder
<b>Prepared Medium</b>	Green coloured, clear to slightly opalescent gel forms in Petri plates
<b>Reaction of 5.1% Solution</b>	pH : 7.2 ± 0.2 at 25°C
<b>Gel Strength</b>	Firm, comparable with 1.0% Agar gel

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

Sr. No.	Organisms	Results to be achieved				
		Inoculum (CFU)	Growth	Recovery	Colour of colony (on plain medium)	Colour of colony (on medium with 1% TTC)
1.	<i>Enterobacter aerogenes</i> ATCC 13048	50 -100	good-luxuriant	≥50%	yellow	reddish brown
2.	<i>Escherichia coli</i> ATCC 25922	50 -100	good-luxuriant	≥50%	yellow	yellow with red centre
3.	<i>Proteus vulgaris</i> ATCC 13315	50 -100	good	40-50%	colourless with blue zone	red with bluish zone
4.	<i>Pseudomonas aeruginosa</i> ATCC 27853	50 -100	good	40-50%	colourless with blue zone	red
5.	<i>Salmonella Typhimurium</i> ATCC 14028	50 -100	good-luxuriant	≥50%	colourless with blue zone	red with bluish zone
6.	<i>Staphylococcus aureus</i> ATCC 25923	≥10 <sup>3</sup>	inhibited	0%	--	--
7.	<i>Klebsiella pneumoniae</i> ATCC 13883	50 -100	good-luxuriant	≥50%	yellow	yellow with red centre

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

## Test Procedure

Refer to appropriate references for standard test procedures.

## Results

The lactose fermenters show greenish yellow colonies with yellow zones while lactose non-fermenters show red colonies surrounded by blue zones. Refer to appropriate references and test procedures for interpretation of results.

## 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. Consult appropriate texts for detailed information and recommended procedures.



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## Packaging

Product Name : Modified Tergitol Agar Base w/ 1.0 % Agar

Product Code : DM1740

Available Pack sizes : 500gm

## References

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. Mossel D.A.A., 1962, J. Appl. Bact., 25:20.
5. Pollard A.L., 1946, Science., 103:758.

## Further Information

For further information please contact your local MICROMASTER Representative.



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