Technical Data

Tergitol-7 HiCynth™ Agar Base

MCD616

Tergitol-7 HiCynth™ Agar Base is recommended for selective enumeration and identification coliform organisms.

Composition**

Ingredients	Gms / Litre
HiCynth™ Peptone No.1*	5.000
HiCynth™ Peptone No.5*	3.000
Lactose	10.000
Sodium heptadecyl sulphate(Tergitol 7)	0.100
Bromo thymol blue	0.025
Agar	15.000
Final pH (at 25°C)	6.9±0.2

**Formula adjusted, standardized to suit performance parameters

*Chemically defined peptones

Directions

Suspend 33.12 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. Aseptically add 3 ml of Triphenyl Tetrazolium Chloride (TTC) Solution (FD057), if desired. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Tergitol-7 Agar was originally designed by Chapman (1) and later on modified by incorporating 2,3,5-Triphenyl Tetrazolium Chloride (TTC) into the medium. This medium is selective and differential used for the detection and enumeration of coliform organisms. Pollard (2) has reported the selective bactericidal property of sodium heptadecyl sulphate (Tergitol-7). Kulp et al (3) corroborated the use of Tergitol-7 Agar with TTC in routine analysis of water and Mossel (4) used this medium for the examination of food materials. Tergitol-7 HiCynth Agar is the modification of the same, prepared using chemically defined peptones instead of animal peptones to avoid BSE/TSE risk.

HiCynth™ Peptone No.1 and HiCynth™ Peptone No.5 serve as sources of carbon, nitrogen compounds, long chain amino acids and other essential nutrients including vitamin B complex. Sodium heptadecyl sulphate (Tergitol-7) inhibits gram-positive bacteria and *Proteus* swarming and yields better recovery of coliforms. Bromo thymol blue is the pH indicator. Lactose fermenting organisms form yellow colonies with yellow zones while *Klebsiella* and *Enterobacter* form greenish yellow colonies. Lactose non-fermenters produce blue colonies. TTC is reduced by the bacterial cell except *Escherichia coli* and *Enterobacter aerogenes* to form formazan, a red coloured insoluble complex, thereby producing red coloured colonies.

Filter the specimen to be analyzed through two membranes. Place the membrane upon two TTC Tergitol HiCynth™ Agar plates. Incubate one plate at 37°C for 24 hours (total coliforms) and the other at 44°C for 18-24 hours (faecal coliforms). The yellow colonies with deep yellow halo after incubation at 44°C should be identified as faecal coliform bacteria.

Quality Control

Appearance
Cream to light green homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium
Green coloured opalescent gel forms in Petri plates.

Reaction
Reaction of 3.31% w/v aqueous solution at 25°C. pH : 6.9±0.2

pH
6.70-7.10

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours with added TTC Solution 1% (FD057).

Cultural Response

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony/ medium
Cultural Response				
Enterobacter aerogenes ATCC 13048	50-100	luxuriant	>=50%	Reddish brown
Escherichia coli ATCC 25922	50-100	good-luxuriant	>=50%	yellow with red centre
Proteus mirabilis ATCC 25933	50-100	good	40-50%	red with bluish zone
Pseudomonas aeruginosa ATCC 27853	50-100	good	40-50%	red with bluish zone
Salmonella Typhimurium ATCC 14028	50-100	luxuriant	>=50%	red with bluish zone
Staphylococcus aureus ATCC 25923	>=10^3	inhibited	0%	
Shigella flexneri ATCC 12022	50-100	good-luxuriant	>=50%	red with bluish zone

Storage and Shelf Life

Store below 30°C in a tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle inorder to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use. Use before expiry date on the label. Product performance is best if used within stated expiry period.

Reference

1.Chapman G.H., 1947, J. Bact., 53:504.
2.Pollard A.L., 1946, Science, 103:758.
3.Kulp W., Mascoli C. and Tavshanjian O., 1953, Am. J. Public Health, 43:1111.
4.Mossel D.A.A., 1962, J. Appl. Bact., 25:20. 5. Rice E.W., Baird, R.B., Eaton A. D., Clesceri L. S. (Eds.), 2012, Standard Methods for the Examination of Water and Wastewater, 22nd ed., APHA, Washington, D.C.

Revision : 01 / 2016