

# **Technical Data**

## **M-EC Test Agar**

M1095

M-EC Test Agar is used for testing Escherichia coli in water samples using membrane filter technique.

Composition**			
Ingredients	Gms / Litre		
Proteose peptone	5.000		
Yeast extract	3.000		
Lactose	10.000		
Sodium chloride	7.500		
Dipotassium phosphate	3.300		
Monopotassium phosphate	1.000		
Sodium lauryl sulphate	0.200		
Sodium deoxycholate	0.100		
Bromocresol purple	0.080		
Bromphenol red	0.080		
Agar	15.000		
Final pH ( at 25°C)	7.3±0.2		
**Formula adjusted, standardized to suit performance parameters			

## **Directions**

Suspend 45.26 grams in 1000 ml distilled water. Heat to boiling with frequent agitation to dissolve the medium completely. DO NOT AUTOCLAVE OR OVERHEAT. Cool to about 50°C. Mix and pour into sterile Petri plates.

## **Principle And Interpretation**

Examination of water, foods, ingredients and raw materials, for the presence of indicator groups such as coliforms is one of the most common tests in a microbiology laboratory, partly because of the relative ease and speed with which these tests can be accomplished. Where it is claimed that drinking water has been processed for safety, the finding of such organism demonstrates a failure of the process. It is a valuable bacterial indicator for determining the extent of faecal contamination of recreational surface waters or drinking water (1). M-EC Test Agar is recommended for the detection, differentiation and enumeration of *Escherichia coli* and coliforms in water using membrane filter technique (2).

Proteose peptone and yeast extract provide necessary nutrients for the growth of coliforms. Lactose is the carbon source as well as fermentable carbohydrate in the medium. Sodium deoxycholate and sodium lauryl sulphate inhibit the growth of contaminating gram-positive microorganisms. Bromocresol purple and bromphenol red are the pH indicators.

Filter the sample through a membrane filter. Place the membrane on M-EC Test Agar and incubate at  $35 \pm 0.5^{\circ}$ C for 2 hours to rejuvenate injured or stressed bacteria and then incubate at  $44.5 \pm 0.2^{\circ}$ C for 22 hours. Transfer filter to a filter pad saturated with urea substrate (Urea 2.0 g + phenol red 10 mg + distilled water 100 ml, adjust the pH between 3 and 4 use within one week). After 15 minutes, count yellow or yellow brown colonies using a fluorescent lamp and magnifying lens. *E. coli* produces yellow or yellow brown colonies.

## **Quality Control**

## Appearance

Light yellow to green homogeneous free flowing powder

#### Gelling

Firm, comparable with 1.5% Agar gel

## Colour and Clarity of prepared medium

Purple coloured clear to slightly opalescent gel forms in Petri plates

## Reaction

Reaction of 4.5 w/v aqueous solution at 25°C. pH: 7.3±0.2

## pН

7.10-7.50

#### **Cultural Response**

M1095: Cultural characteristics observed after an incubation at 35- 37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Colour of Colony
Cultural Response			
Escherichia coli ATCC 25922	50-100	luxuriant	yellow
Staphylococcus aureus ATCC 25923	>=103	inhibited	
Enterococcus faecalis ATC 29212	C>=10 <sup>3</sup>	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. Corry J. E. L., Curtis G. D. W., and Baird R. M., Culture Media for Food Microbiology, Vol. 34, Progress in Industrial Microbiology, 1995, Elsevier, Amsterdam

2. Eaton A. D., Clesceri L. S. and Greenberg A W., (Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st Ed., APHA, Washington, D.C.

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