M-Endo Broth

Intended Use
M-Endo broth is a medium used for estimation of coliforms in water using a membrane filter technique.

Summary
The filtration technique enables fairly large volumes of water to pass rapidly under pressure, but prevents the passage of any bacteria present. These nutrients are retained on the surface of the membrane which is then brought into contact with suitable liquid nutrients. These diffuse upwards through the pores thereby inducing the organisms to grow as surface colonies which can be counted. M-Endo Broth was used for studying milk lines of milk handling equipment and for examination of swimming pool waters using membrane filter technique. This medium gives higher counts and is most satisfactory of the many media used, since coliform colonies develop rapidly, preliminary enrichment and saturated relative humidity are not necessary and results are in good agreement with the Standard Methods MPN Test.

Principle
Casitone, thiopeptone, tryptose and yeast extract provide essential nutrients especially nitrogenous for the coliforms. Lactose is the fermentable carbohydrate. Sodium sulphite and basic fuchsin inhibit the growth of Gram-positive organisms. Phosphates buffer the medium. Coliforms ferment lactose and the resulting acetaldehyde reacts with sodium sulphite and basic fuchsin to form red colonies and similar colouration of the medium. Lactose non-fermenters form colourless colonies.

Formula*

Ingredients	**g/L**
Yeast Extract	1.5
Casitone	5.0
Thiopeptone	5.0
Tryptose	10.0
Lactose	12.5
Sodium Deoxycholate	0.1
Dipotassium Phosphate	4.375
Monopotassium Phosphate	1.375
Sodium Chloride	5.0
Sodium Lauryl Sulphate	0.05
Sodium Sulphite	2.1
Basic fuchsin	1.05
Final pH (at 25°C)	7.2 ± 0.1

*Adjusted to suit performance parameters.

Storage and Stability
Store dehydrated medium below 30°C in tightly closed container and the prepared medium at 2°C-8°C. Avoid freezing and overheating. Use before expiry date on the label. Once opened keep powdered medium closed to avoid hydration.

Type of Specimen
Water samples

Specimen Collection and Handling
Ensure that all samples are properly labelled. Follow appropriate techniques for handling samples as per established guidelines. Some samples may require special handling, such as immediate refrigeration or protection from light, follow the standard procedure. The samples must be stored and tested within the permissible time duration. After use, contaminated materials must be sterilized by autoclaving before discarding.

Directions

1. Dissolve 48.05 g of the powder in 1000 mL purified / distilled water containing 20 mL non-denatured ethanol.
2. Heat to boiling but avoid over-heating.
3. DO NOT AUTOCLAVE

Quality Control

Dehydrated Appearance: Pink to purple coloured, homogeneous, free flowing powder.
Prepared Appearance: Pinkish red coloured, opalescent solution with precipitate in tubes.
Cultural Response: Cultural characteristics observed after an incubation of 18-24 hours at 30°C-35°C and subsequently recovery on the M-ENDO Agar LES plates.

Organism (ATCC)	Growth	Colour of Colony
Escherichia coli (25922)	Good	Pink with metallic sheen
Klebsiella aerogenes (13048)	Good	Pink
Salmonella enterica subsp. *enterica* serovar *Typhimurium* (14028)	Good	Colourless
Klebsiella pneumoniae (13883)	Good	Pink
Staphylococcus aureus subsp. *aureus* (25923)	Inhibited	-

Performance and Evaluation

Performance of the product is dependent on following parameters as per product label claim:

1. Directions
2. Storage
3. Expiry

Warranty

This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

Reference

1. Cruickshank R., Duguid J. P., Marmion B. P., Swain R. H. A., (Eds.), Medical Microbiology, 1975, 12th Ed. Vol. II, Churchill Livingstone
2. Olson, Brown and Mickle, 1960, J., Milk and Food Tech., 23:86.
3. Shipe E. L. and Fields A., 1955, Public Health Lab., 13:44.
4. Slanetz L. W. and Bartley C. H., 1955, Applied Microbiol., 3:46.
5. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	Product description	Pack Size
201130060500	Dehydrated Culture Media	500 g