TM 2202 - M-TEC AGAR

INTENDED USE

For isolation, differentiation and rapid enumeration of thermotolerant *Escherichia coli* from water by membrane filtration.

PRODUCT SUMMARY AND EXPLANATION

M-TEC Agar is recommended for rapid isolation, differentiation and rapid enumeration of thermotolerant *E. coli* from water by membrane filtration. TEC stands for thermotolerant *E. coli*, the presence of which is widely used as an indicator of faecal contamination in water. There are many procedures for enumerating *E. coli* based on its ability to grow at elevated temperatures and produce indole from tryptophan. The determination of indole production along with MPN procedures requires the use of additional medium and additional incubation time. Dufour et al developed a simple membrane filtration technique for rapid enumeration of E. coli, which quantified *E. coli* within 24 hours without requiring subculturing and identification of isolates.

M-TEC Agar and urea substrate are recommended for use in the detection of *E. coli* when evaluating microbiological quality of recreational water.

Membrane filters that are used for filtration are aseptically placed with face upwards on the surface of M-TEC Agar. These plates are then incubated at 44.5 ± 0.5°C. Following incubation, these filters are aseptically placed on sterile absorbent cotton pads saturated with urease substrate i.e. urea (approx. 2 ml). Urease substrate is prepared by dissolving 2 grams' urea and 0.01gram phenol red in 100 ml distilled water with the pH adjusted to 5.0 ± 0.2. Urease-negative reaction or formation of yellow to yellow brown colonies observed after 15-20 minutes is confirmatory for presence of thermotolerant *E. coli.*

COMPOSITION

Ingredients	Gms / Ltr
Proteose peptone	5.000
Yeast extract	3.000
Lactose	10.000
Sodium chloride	7.500
Potassium dihydrogen phosphate	1.000
Dipotassium hydrogen phosphate	3.300
Sodium lauryl sulphate	0.200
Sodium deoxycholate	0.100
Bromocresol purple	0.080
Bromphenol red	0.080
Agar	15.000

PRINCIPLE

Proteose peptone and yeast extract act as source of nitrogen, carbon, amino acids and vitamins. Potassium phosphate salts help in buffering the medium. Lactose is the source of fermentable carbohydrate. Bromocresol purple and bromophenol red serve as indicator. Sodium lauryl sulphate and sodium deoxycholate inhibit gram-positive bacteria.

INSTRUCTION FOR USE

- Dissolve 45.26 grams in 1000 ml distilled water.
- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.

- Cool to 45°C and pour into sterile Petri plates.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Cream to yellow homogeneous free flowing powder
Appearance of prepared medium : Dark purple coloured with red cast clear to slightly opalescent gel forms in Petri plates
pH (at 25°C) : 7.3±0.2

INTERPRETATION

Cultural characteristics observed after an incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Incubation Temperature	Incubation Period	Incubation Temperature	Incubation Period
Escherichia coli	*25922*	50-100	good (further testing using urease substrate should be performed)	40-50%	35-37°C	2 Hours	44.5°±0.5°C	22 Hours

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

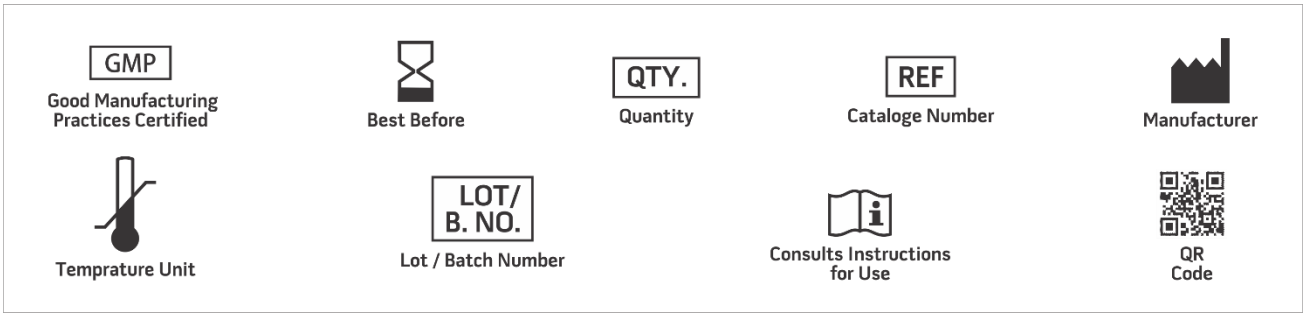
Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.
Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

1. Mara D. D., 1973, J. Hyg. 71: 783.
2. Clesceri L. S., Greenberg A. E. and Eaton A. D., (Ed.), 1998, Standard Methods for the Examination of Water and Waste water, 20th Ed., American Public Health Association, Washington, D.C.
3. Dufour A. P., Strickland E. R. and Cabelli V. J., 1981, Appl. Environ. Microbiol., 41: 1152



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**

Revision: 08 Nov., 2019