

### Fecal Coliforms Agar Base (m-FC) Cat. No. MM-M-N127

**For the cultivation and enumeration of fecal coliforms in water by the membrane-filtration technique at a high temperature.**

#### **Principles and uses:**

Fecal Coliforms Agar Base (m-FC) is prepared according to the formula proposed by Geldreich, Clark and Bert and it is used for the cultivation and enumeration of fecal coliforms microorganisms. This medium is suitable for the membrane filter technique at a high temperature. Many standard procedures specify the use of Fecal coliforms Media for testing water and foods.

Fecal coliforms are differentiated from other coliforms from environmental sources by their ability to grow at  $44.5 \pm 0.5$  °C. Proteose and Tryptose provide nitrogen, vitamins, minerals and amino acids essential for growth. Yeast extract is a source of vitamins, particularly of the B-group essential for bacterial growth. Lactose is the fermentable carbohydrate as a carbon and energy source. Bile salts and aniline blue inhibit growth of Gram-positive bacteria. Sodium chloride maintains the osmotic balance. Aniline blue and rosolic acid, which is provided by the supplement, are the differential indicators. Bacteriological agar is the solidifying agent.

#### **Formula per Litre:**

Bacteriological agar	15g	Bile salts	1.5g
Lactose	12.5g	Proteose peptone	5g
Sodium chloride	5g	Tryptose	10g
Yeast extract	3g	Aniline blue	0.1g

#### **Preparation:**

Suspend 52.1 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Cool to 45-50 °C and aseptically add 2 vials, each vial for 500 ml of the medium, of Fecal Coliforms Supplement (Cat. No. MMS-M-X023). Homogenize gently and dispense into Petri dishes

#### **Instructions for use:**

##### **Membrane filtration method:**

- Place the membrane filter, which the sample has been filtered through, in the upper part of the Petri dish with the solidified agar.
- Incubate the plates for  $24 \pm 2$  hours, one batch as control at  $35 \pm 2$  °C, and the rest at  $44.5 \pm 0.5$  °C.
- Observe the coliforms and count the colonies.

The differential indicator system (aniline blue and rosolic acid) gives a blue color to the colonies of fecal coliforms, while the rest of the microorganisms will become pinkish colored

#### **Quality control:**

Solubility	Appearance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25°C)
w/o rests	Fine powder	Beige	Gray-blue. With supplement: Red	$7.4 \pm 0.2$

# Technical Data Sheet

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### Microbiological test:

Incubation conditions: (35±2 °C / 18-24 h)

Microorganisms	Specification	Characteristic reaction
Shigella flexneri ATCC 12022	Good growth (35 °C), Inhibited growth (44.5 °C)	Pinkish colonies
Salmonella typhimurium ATCC 14028	Good growth (35 °C), Good growth (44.5 °C)	Pinkish colonies
Enterococcus faecalis ATCC 19433	Total inhibition	-
Escherichia coli ATCC 25922	Good growth (35 °C), Good growth (44.5 °C)	Blue colonies

### Storage:

Temperature: 2°C - 25°C

### Bibliography:

Geldreich, Clark and Kabler, 1963. USPHS, HEW. Personal Communication.

Geldreich, Clark, Huff and Bert, 1965. Journal of American Water Works Association, 57:208..

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