



## MUD SF Broth Base

M1343

MUD SF Broth Base is recommended for the detection and enumeration of intestinal Enterococci in surface and waste water by miniaturized method (MPN).

### Composition\*\*

Ingredients	Gms / Litre
Tryptose	40.000
Monopotassium phosphate	10.000
D-Galactose	2.000
Tween 80 (Polysorbate 80)	1.500
4-Methylumbelliferyl-beta-D-glucoside (MUD)	0.150
Final pH ( at 25°C)	7.5±0.2

\*\*Formula adjusted, standardized to suit performance parameters

### Directions

Suspend 5.36 grams in 100 ml distilled water. Heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45 - 50°C and aseptically add rehydrated contents of one vial of Enterococcus Selective Supplement (FD148) and 1 ml of sterile 1% TTC Solution (FD057). Mix well and dispense as desired.

### Principle And Interpretation

The normal habitat of faecal Streptococci is the gastrointestinal tract of warm-blooded animals. The *Enterococcus* group is a subgroup of the faecal Streptococci that includes *E. faecalis*, *E. faecium*, *S. gallinarum* and *S. avium*. The Enterococci are differentiated from other Streptococci by their ability to grow in high sodium chloride concentration i.e. 6.5% at pH 9.6 and at 10°C to 45°C. The Enterococci portion of the faecal *Streptococcus* group is a valuable bacterial indicator for determining the extent of faecal contamination of recreational surface waters. The multiple tube techniques are applicable primarily to raw and chlorinated waste-water and sediments and can be used for fresh and marine waters.

MUD SF Broth is prepared as per the formula accepted by ISO committee under the specification ISO 7899-1:1998 for detection and enumeration of Enterococci in surface and waste water by miniaturized method (MPN) (1).

Tryptose provides carbonaceous, nitrogenous and other essential growth nutrients. Galactose serves as energy source. Phosphate buffers the medium well. Tween 80, (Polyoxyethylene sorbitan monooleate) provides fatty acids. MUD (4-Methylumbelliferyl-β-D-glucoside) is added as fluorogenic substance. Intestinal Enterococci are capable of anaerobic growth at 44°C and of hydrolyzing 4-methylumbelliferyl-β-D-glucoside (MUD) in the presence of thallium acetate, nalidixic acid (as FD) and 2, 3, 5-Triphenyltetrazolium chloride resulting in blue fluorescence.

The diluted sample is inoculated in a row of microtitre plate wells containing dehydrated culture medium. Once the microtitre plate is inoculated, cover with disposable sterile adhesive tape and incubate the plate at 44°C for minimum of 36 hours and maximum 72 hours. Observe under UV light at 366 nm in the dark after an incubation period of 36 to 72 hours. The presence of Enterococci is indicated by fluorescence resulting from the hydrolysis of MUD. The results are reported as Most Probable Number per 100 ml.

### Quality Control

#### Appearance

Cream to yellow homogeneous free flowing powder

#### Colour and Clarity of prepared medium

Light amber coloured clear solution

#### Reaction

Reaction of 5.3% w/v aqueous solution at 25°C. pH : 7.5±0.2

#### pH

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7.30-7.70

### Cultural Response

M1343: Cultural characteristics observed after an incubation at 44°C for 36-72 hours.

Organism	Inoculum (CFU)	Growth	Fluorescence at 366 nm
<b>Cultural Response</b> <i>Enterococcus faecalis</i> ATCC 50-100 29212		luxuriant	positive, blue

### 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. International Organization for Standardization (ISO), ISO 7899-1:1998

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### Disclaimer :

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