# TM 2184 - M-ENRICHMENT BROTH

## INTENDED USE

For enumeration of bacteria by membrane filter technique and for preliminary enrichment of organisms on membrane filter prior to using selective media.

## PRODUCT SUMMARY AND EXPLANATION

In microbiological analysis of water samples includes membrane filter technique which is an alternative to most probable number (MPN) method. In membrane filter technique, through organic membrane using a filter funnel and vacuum system the fluid sample is passed. The surface of the membrane is concentrated with an organism. The filter membrane is then placed on surface of nutrient agar plate. The colonies are counted to determine the number of bacteria originally present. In water and waste water bacteria may become stressed or injured. Due to structural or metabolic damage these injured bacteria cannot grow and don't form colonies in standard conditions. Incubating and initially culturing in enriched, non-inhibitory medium is used to enhance the resuscitation of stressed or injured organisms M-Enrichment Broth is used for the preliminary enrichment of organism.

If small numbers of organisms are present that can be detected by enrichment. Clark et al described the formula of M-Enrichment Broth is prepared according to the formula described by. This medium is also recommended for use in conjunction with M-EMB Broth and M-Bismuth Sulphite Broth. Many authors have recommended this medium for enrichment of organisms prior to isolation .M-Enrichment Broth medium is devoid of any carbohydrate source or indicator. However, these ingredients (or may be other ingredients also) can be added to this nutritive medium that can obtain a variety of media which are capable of demonstrating biological characteristics of microorganisms.

## COMPOSITION

| Ingredients | Gms / Ltr |
|---|---|
| **Protease peptone** | 40.000 |
| **Dipotassium hydrogen phosphate** | 3.000 |
| **Sodium chloride** | 5.000 |
| **Yeast extract** | 6.000 |

## PRINCIPLE

The nitrogenous nutrients like amino acids, peptides, vitamin B1, trace ingredients etc. provide by proteose peptone and yeast extract to growing organisms. Dipotassium phosphate buffers the medium while sodium chloride maintains the osmotic balance.

2ml of M-Enrichment Broth is soaked into sterile cotton absorbent pads. The filtration membrane filter is placed aseptically on these soaked absorbent cotton pads containing M-Enrichment Broth for the filtration procedure. For 4-6 hours, the membrane filters are incubated. The membrane filters are then placed aseptically on selective medium plates for selective isolation of the desired organisms. However, pre-enrichment for 6 hours, rather than 24 hours, resulted in significantly higher numbers of false-negative results.

## INSTRUCTION FOR USE

- Dissolve 54 grams in 1000 ml distilled water.
- Heat if necessary to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.

## QUALITY CONTROL SPECIFICATIONS

**Appearance of Powder** : Cream to yellow homogeneous free flowing powder
**Appearance of prepared medium** : Light amber coloured clear solution without any precipitate
**pH (at 25°C)** : 7.0 ± 0.2

## INTERPRETATION

| Microorganism | ATCC | Inoculum (CFU/ml) | Growth | Recovery | Incubation Temperature | Incubation Period |
|---|---|---|---|---|---|---|
| *Escherichia coli* | 25922 | 50-100 | Luxuriant | >=70% | 35-37°C | 18-24 Hours |
| *Salmonella Typhi* | 6539 | 50-100 | Luxuriant | >=70% | 35-37°C | 18-24 Hours |
| *Staphylococcus aureus* | 25923 | 50-100 | Luxuriant | >=70% | 35-37°C | 18-24 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
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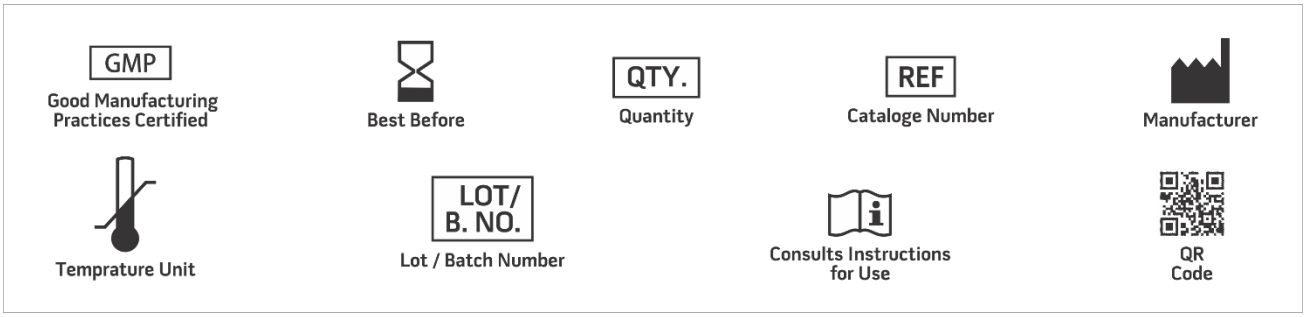


**NOTE:** Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**

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