# TM 403 - MANNITOL SALT BROTH

## INTENDED USE

For selective isolation of presumptive pathogenic Staphylococci.

## PRODUCT SUMMARY AND EXPLANATION

Mannitol Salt Broth is prepared as suggested by Chapman and is used for the selective isolation of pathogenic Staphylococci. This medium is recommended for the detection and enumeration of coagulase-positive Staphylococci in milk food and other specimens. Mannitol Salt Broth is used for the isolation of presumptive pathogenic staphylococci. Pathogenic staphylococci ferment mannitol and produce a yellow coloured medium.

A possible *S. aureus* must be confirmed by the coagulase test. Also the organism should be subcultured to a less inhibitory medium not containing excess salt to avoid the possible interference of salt with coagulase testing or other diagnostic tests (e.g. Nutrient Broth). Few strains of *S. aureus* may exhibit delayed mannitol fermentation. Negative results should therefore be re-incubated for an additional 24 hours before being discarded.

## COMPOSITION

| Ingredients | Gms / Ltr |
|---|---|
| **Proteose peptone** | 10.000 |
| **Beef extract** | 1.000 |
| **Sodium chloride** | 75.000 |
| **D-Mannitol** | 10.000 |
| **Phenol red** | 0.025 |

## PRINCIPLE

The medium contains Beef extract and proteose peptone which makes it very nutritious as they provide essential growth factors and trace nutrients. Many other bacteria except Staphylococci are inhibited by 7.5% sodium chloride. Mannitol is the fermentable carbohydrate source. The differential action of the medium is attributed to D-Mannitol. *Staphylococcus aureus* ferments mannitol to produce yellow coloured medium. Most coagulase-negative species of Staphylococci and Micrococci do not ferment mannitol and therefore the medium remains red in colour. The colour of the medium is due to the reactivity of phenol red to the pH of the medium; phenol red is red at pH 8.4 and yellow at 6.8. Presumptive *Staphylococcus* showing yellow coloured medium should be further tested for production of coagulase.

## INSTRUCTION FOR USE

- Dissolve 96.02 grams in 1000 ml purified / distilled water.
- Heat if necessary to dissolve the medium completely.
- Dispense as desired and sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.
- Cool to 45-50°C.

Note: This product contains 7.5% sodium chloride as one of its ingredients. On repeated exposure to air and absorption moisture sodium chloride has tendency to form lumps, therefore we strongly recommend storage in tightly closed containers in dry place away from bright light.

## QUALITY CONTROL SPECIFICATIONS

**Appearance of Powder** : Light yellow to pink homogeneous free flowing powder.
**Appearance of prepared medium** : Red coloured clear solution in tubes.
**pH (at 25°C)** : 7.4±0.2

## INTERPRETATION

Cultural characteristics observed after an incubation.

| Microorganism | ATCC | Inoculum (CFU/ml) | Growth | Colour of medium | Incubation Temperature | Incubation Period |
|---|---|---|---|---|---|---|
| *Escherichia coli* | 25922 | >=$10^3$ | Inhibited | - | 35-37°C | 18-48 Hours |
| *Staphylococcus* subsp. *aureus* | 25923 | 50-100 | Good-luxuriant | Yellow | 35-37°C | 18-48 Hours |
| *Staphylococcus* Epidermidis | 12228 | 50-100 | Fair-good | Red | 35-37°C | 18-48 Hours |

**PACKAGING:**
In pack size of 100 gm and 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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5. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
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8. Salfinger Y., and Tortorello M.L., 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
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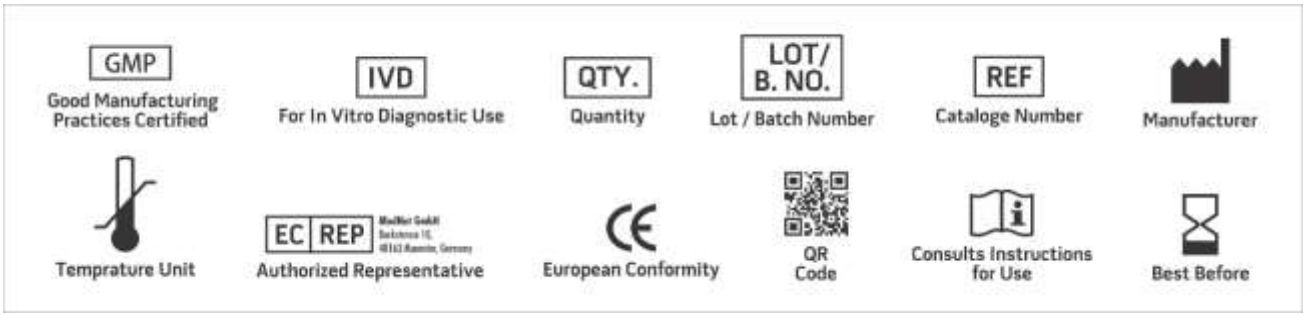


**NOTE:** Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**

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