# CM 22025 - MANNITOL SALT AGAR (as per USP/BP/EP/JP/IP) (VEG.)

## INTENDED USE

Forselectiveisolation and enumeration of *Staphylococci* species.

## PRODUCT SUMMARYAND EXPLANATION

Staphylococci have the uniqueability ofgrowing on a high salt containing media. Isolation of coagulase-positive staphylococci on Phenol Red Mannitol Agarsupplemented with 7.5%NaCl was studied by Chapman. The resulting Mannitol Salt Agar Base is recommended fortheisolation of coagulase-positive staphylococci from cosmetics, milk, food and other specimens. It is also used intheperformance of microbial limit tests for the selective isolation of Staphylococcus. The formulation is in accordancewith the harmonization of USP/EP/BP/JP/IP.

## COMPOSITION

| Ingredients | Gms / Ltr |
|---|---|
| **Sodium chloride** | 75.000 |
| **Agar** | 15.000 |
| **D-Mannitol** | 10.000 |
| **Magnesium chloride** | 5.000 |
| **Veg. peptone** | 5.000 |
| **Veg extract** | 1.000 |
| **Phenol red** | 0.025 |

## PRINCIPLE

Themedium contains Veg. extract, Veg. hydrolysate and Veg.peptone which makes it very nutritious as they provide carbon, nitrogen compounds, long chain amino acids, vitamins and other essential growth factors and trace nutrients. Bacteria that grow in the presence of a high salt concentration and ferment mannitol produce acid products, turning the phenol red pH indicator from red to yellow. Mannitol is the fermentable carbohydrate which leads to acid production, detected by Phenol red indicator. Staphylococcus aureus ferment mannitol and produce yellow coloured colonies surrounded by yellow zones. The lipase activity can be visualized as yellow opaque zones around the colonies. Coagulase negative strains of Staphylococcus aureus are usually mannitol non-fermenters and therefore produce pink to red colonies surrounded by red-purple zones. Presumptive coagulase-positive yellow colonies of Staphylococcus aureus should be confirmed by performing the coagulase test. Agar is the solidifying agent. The additional property of lipase activity of Staphylococcusaureus can be detected by the addition of the Egg Yolk Emulsion (TS 002). The lipase activity can be visualized as yellowopaque zones around the colonies.

## INSTRUCTIONFOR USE

Dissolve 111.02grams of the medium in 1000 ml distilled water.
Gently heat toboiling with swirling to dissolve the medium completely.
Sterilize by autoclaving at 15 psi (121°C) for 15 minutes.
Cool to 45 - 50°C.
If desired, add5%v/v Egg Yolk Emulsion (TS 002).
Mix well and pourinto sterile Petri plates.

## QUALITY CONTROL SPECIFICATIONS

| | | |
|---|---|---|
| **Appearance of Dehydrated powder** | : | Light yellow to pink colour, homogeneous free flowing powder |
| **Appearance of Prepared medium** | : | Red colour, clear to slightly opalescent gel |

**pH (at 25°C)** : 7.4±0.2

## INTERPRETATION

Culturecharacteristics observed after incubation.

| Microorganism | ATCC | Inoculum (CFU/ml) | Growth | Colour of Colony | Recovery | Incubation Temperature | Incubation Period |
|---|---|---|---|---|---|---|---|
| *Staphylococcus aureus* | 25923 | 50-100 | Good-Luxuriant | Yellow | ≥50% | 30 - 35°C. | 18-72 hours |
| *Staphylococcus aureus* | 6538 | 50-100 | Good-Luxuriant | Yellow | ≥50% | 30 - 35°C. | 18-72 hours |
| *Staphylococcus epidermidis* | 12228 | 50-100 | Fair | Red | 30-40% | 30 - 35°C. | 18-72 hours |
| *Proteus mirabilis* | 12453 | 50-100 | None to poor | Red | ≤10% | 30 - 35°C. | 18-72 hours |
| *Escherichia coli* | 25922 | ≥1000 | Inhibited | - | 0% | 30 - 35°C. | => 72 Hours |
| *Escherichia coli* | 8739 | ≥1000 | Inhibited | - | 0% | 30 - 35°C. | => 72 Hours |

## PACKAGING

In100&500gm packaging size.

## STORAGE

Dehydratedpowder, hygroscopic in nature, store in a dry place, in tightly-sealed containers below 25°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..

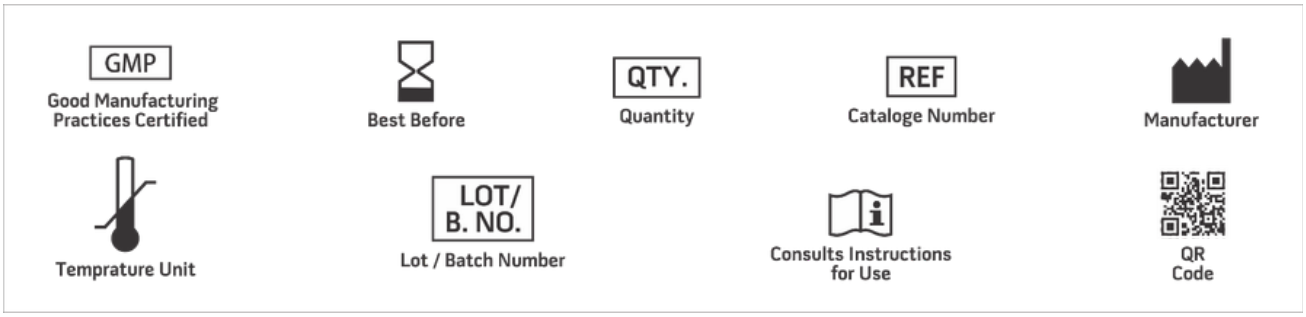
**Product Deterioration:** Do not use, if powder show evidence of microbial contamination, discoloration, drying, or other signs of deterioration.

## DISPOSAL

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

## REFERENCES

1. American Public Health Association, 1966, Recommended Methods for the Microbiological Examination of Foods, 2nd Ed, APHA, New York.
2. British Pharmacopoeia, 2016,The Stationery office British Pharmacopoeia
3. Chapman G. H., 1945, J. Bacteriol., 50:201.
4. Davis J. G., 1959, Milk testing, 2nd Ed., Dairy Industries Ltd, London.
5. European Pharmacopoeia, 2017, EDQM.
6. Hitchins A. D., Tran T. and McCarron J. E., 1995, FDA Bacteriological Analytical Manual, 8th Ed., AOAC International, Gaithersburg, Md.
7. Japanese Pharmacopoeia, 2016.
8. Koch P. K., 1942, Zentralbl. Bakteriol. Parasitenkd. Abt. I Orig.149:122.
9. Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H. and Yolken R. H., (Ed.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.
10. Silverton R. E. and Anderson M. J., 1961, Handbook of Medical Laboratory Formulae, Butterworths, London.
11. The United States Pharmacopoeia, 2019, The United States Pharmacopoeial Convention, Rockville, MD.




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

***Forprofessionaluseonly.**