Reference: 170560ZA **Technical Data Sheet**

Product: **Mannitol Salt Agar**

Specification

Selective medium for the isolation of pathogenic staphylococci, according to the Pharmacopoeial Harmonized Methodology and Clinical samples.

Presentation

30 Membrane filtration plates
55 mm Plates for filtration purposes
with: 9 ± 1 ml

Packaging Details
1 box containing: 6 plastic bags with 5 plates of 55 mm/ bag.

Shelf Life
6 months

Storage
2-25 ºC

Composition

Composition (g/l):

Meat Peptone	5.000
Beef extract	1.000
Peptone from casein	5.000
Sodium chloride	75.000
D(-)Mannitol	10.000
Phenol red	0.025
Agar	15.000

Description /Technique

Description:
Mannitol Salt Agar is a classical medium for the detection and enumeration of staphylococci. It was described by Chapman and has been adopted by many official organisations. Several modifications of it have been developed, all formulations resulting in media with similar efficiency.
This medium takes advantage of the high saline tolerance of staphylococci, and uses sodium chloride as a selective agent. Only staphylococci and halophilic enterobacteria are able to grow freely at the concentration of salt employed in this medium, while other bacteria are inhibited. It also exploits the correlation between the pathogenicity of staphylococci and their ability ferment mannitol. Mannitol fermentation results in an accumulation of acid products, indicated by the phenol red indicator turning yellow. A yellow halo surrounds the presumptive pathogenic colonies, while the rest of the medium remains red/orange in colour.

Technique:
Collect, dilute and prepare samples and volumes as required according to specifications, directives, official standard regulations and/or expected results.
Filter the sample through a 0.45 µm pore membrane and apply it onto the surface of the agar.
Incubate the plates aerobically at 30-35 ºC for 24-48-72 h
(Incubation times longer than those mentioned above or different incubation temperatures may be required depending on the sample, on the specifications,...)
After incubation, enumerate all the colonies that have developd onto the surface of the membrane, considering both yellowish colonies and red or colourless colonies.
Calculate total microbial count per ml of sample by multiplying the average number of clonies per plate by the inverse dilution factor .
Report results as Colony Forming Unit (CFU's) per ml along with incubation time and temperature.
Presumptive isolation of S. aureus must be confirmed by further microbiological and chemical tests.

Note: According to the methodology chosen by the laboratory (Pharmacopeia or other international standards), may be slight variations in incubation times and temperatures, as well as inhibition of *E. coli*, which can be variable depending on the inoculated bacterial population. This medium can normally reduce the bacterial load by up to 3 decimal logarithms.

VWR International LLC, Radnor Corporate Center, Building One, Suite 200, 100 Matsonford Road Radnor, PA 19087
VWR International bv - Haasrode Research Park, Zone 2020 - Geldenaaksebaan 464 - BE-3001 Leuven
www.vwr.com

Reference: 170560ZA **Technical Data Sheet**

Product: **Mannitol Salt Agar**

Quality control

Physical/Chemical control

Color : Strongly pink pH: 7.4 ± 0.2 at 25ºC

Microbiological control

Membrane Filtration. Inoculate with 10-100 CFU according to harmonized Parmacopoeiae or with 100-1000 CFU for selectivity.

Analytical methodology according to ISO 11133:2014/A1:2018; A2:2020.

Aerobiosis. Incubation at 30-35ºC. Reading at 18-72h

Microorganism	Growth
Staphylococcus aureus ATCC® 6538, WDCM 00032	Good (≥50 %)
Stph. aureus ATCC® 25923, WDCM 00034	Good (≥50 %)
Stph. epidermidis ATCC® 12228, WDCM 00036	Poor to good
Escherichia coli ATCC® 8739, WDCM 00012	Inhibited

Sterility Control

Incubation 48 h at 30-35 ºC and 48 h at 20-25 ºC: NO GROWTH.
Check at 7 days after incubation in same conditions.

Bibliography

· ATLAS, R.M. & L.C.PARKS (1993) Handbook of Microbiological Media. CRC Press. Boca Raton. Fla. USA.
· CHAPMAN (1945) The significance of sodium chloride in studies of staphylococci. J. Bact 50:201.
· DOWNES, F.P. & K. ITO (2001) Compendium of Methods for the Microbiological Examination of Foods. 4th ed. APHA. Washington. DC. USA.
· EUROPEAN PHARMACOPOEIA 11.0 (2023) 11th ed. § 2.6.13. Microbiological examination of non-sterile products: Test for specified microorganisms. Harmonised Method. EDQM. Council of Europe. Strasbourg.
· FDA (Food and Drug Adminstrations) (1995) Bacteriological Analytical Manual. 8th ed. Revision A. AOAC Internacional Inc. Gaithersburg. MD. USA.
. ISO 11133:2014/ Adm 1:2018. Microbiology of food, animal feed and water. Preparation, production, storage and performance testing of culture media.
· ISO 22718 Standard (2015) . Cosmetics - Microbiology - Detection of Staphylococcus aureus.
· USP 33 - NF 28 (2011) <62> Microbiological examination of non-sterile products: Test for specified microorganisms. Harmonised Method. USP Corp. Inc. Rockville. MD. USA.