



Technical Data

Modified Fungal Agar Base (Modified Inhibitory Mould Agar) M1045

Modified Fungal Agar Base, with the addition of Polysorbate 80, is recommended for estimation of moulds in cosmetics and toiletries.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	2.500
Peptic digest of animal tissue	2.500
Yeast extract	5.000
Dextrose	20.000
Disodium hydrogen phosphate	3.500
Monopotassium hydrogen phosphate	3.400
Ammonium chloride	1.400
Sodium carbonate	1.000
Magnesium sulphate	0.060
Chloramphenicol	0.100
Agar	15.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 54.46 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Add 20 ml of Polysorbate 80. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Modified Fungal Agar Base is formulated as described by Mead and O'Neill (1) for estimating moulds in cosmetics and toiletries. Earlier culture media developed for determining mould counts in cosmetics and toiletries etc. required upto 7 days of incubation for the valid count (2, 3, 4), unlike Mead and O'Neill formulation which requires 3 days at $27.5 \pm 0.5^\circ\text{C}$.

The medium contains casein enzymic hydrolysate, peptic digest of animal tissue, yeast extract, dextrose and inorganic salts which makes it a very nutritious medium. Potential contaminants of cosmetics and toiletries like *Pseudomonas aeruginosa* and *Serratia marcescens* are effectively inhibited by the Chloramphenicol in the medium. Sodium and potassium phosphates make the medium well buffered. Polysorbate 80 serves as a neutralizer of preservatives such as methyl paraben and physically hold or seclude the surfactants like sodium lauryl sulphate and lauroyldiethanolamide. These surfactants might suppress the growth or the spore germination of moulds (4). The pH of the medium is neutral which inactivates preservatives such as benzoic acid that is active at pH values below 6.0 but not active at pH near to the neutrality (3).

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Amber coloured, clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 5.44% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH

6.80-7.20

Cultural Response

M1045: Cultural characteristics observed after an incubation at 27 - 28°C for 48 - 72 hours.

Organism	Inoculum (CFU)	Growth	Recovery
Cultural Response			
* <i>Aspergillus brasiliensis</i> ATCC 16404	50-100	good-luxuriant	
<i>Escherichia coli</i> ATCC 25922	$\geq 10^3$	inhibited	0%
<i>Pseudomonas aeruginosa</i> ATCC 27853	50-100	none-poor	$\leq 10\%$

Key : * - Formerly known as *Aspergillus niger*

Storage and Shelf Life

Store between 15-25°C in tightly closed container and prepared medium at 2-8°C. Use before expiry date on the label.

Reference

- 1.Mead and O'Neill, 1986, J. Soc. Cosmet. Chem., 37 : 49.
- 2.U.S. Food and Drug Administration, 1984, Bacteriological Analytical Manual, 6th ed., AOAC. Arlington, Va.
- 3.Williams (Ed.), 1984, Official Methods of Analysis of the AOAC, 14th ed., AOAC, Arlington, Va.
- 4.The United States Pharmacopeia, 1985, 21st rev., United States Pharmacopeial Convention, Rockville, MD.

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