

Technical Information

Modified Fungal Agar Base (Modified Inhibitory Mold Agar)

Product Code: DM 2045

Application: - 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

Principle & 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 isolating and counting mould 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 ± 0.5°C.

The medium contains casein enzymic hydrolysate, peptic digest of animal tissue, yeast extract, dextrose and inorganic salts which makes this medium very nutritious. Potential contaminants of cosmetics and toiletries like *Pseudomonas aeruginosa* and *Serratia marcescens* are effectively controlled 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 holds or secludes 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⁾.

Methodology

Suspend 54.46 grams of powder in 1000 ml distilled water. Shake well & heat 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.

Quality Control

Physical 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 range 6.80-7.20

Cultural Response/Characteristics

DM2045: Cultural characteristics observed after an incubation at 27 - 28°C for 48 - 72 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Esculin Hydrolysis
* <i>Aspergillus brasiliensis</i> ATCC 16404	50-100	Good-luxuriant		Positive reaction blackening of medium
<i>Escherichia coli</i> ATCC 25922	$\geq 10^3$	inhibited	0%	Negative reaction
<i>Pseudomonas aeruginosa</i> ATCC 27853	50-100	none-poor	$\leq 10\%$	Positive reaction blackening of medium around the colony

Key :* - Formerly known as *Aspergillus niger*

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

Prepared Media: 2-8⁰ in sealable plastic bags for 2-5 days.

Further Reading

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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