Modified Fungal Agar Base (Modified Inhibitory Mould Agar)

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

**Composition**

**Ingredients**

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

**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 up to 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 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**
--- | --- | --- | ---
*Aspergillus brasiliensis* ATCC 16404 | 50-100 | good-luxuriant |
*Escherichia coli* ATCC 25922 | $\geq 10^3$ | inhibited | 0%
*Pseudomonas aeruginosa* 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**

Disclaimer:
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