



## MYP Agar Base

M636F

MYP Agar Base is used for isolation and identification of *Bacillus cereus* in accordance with FDA BAM.

### Composition\*\*

Ingredients	Gms / Litre
HM Peptone B #	1.000
Peptone	10.000
Mannitol	10.000
Sodium chloride	10.000
Phenol red	0.025
Agar	15.000
Final pH ( at 25°C)	7.2±0.2

\*\*Formula adjusted, standardized to suit performance parameters

# Equivalent to Beef extract

### Directions

Suspend 23.01 grams in 450 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Aseptically add rehydrated contents of 1 vial of sterile Polymyxin B Sulphate (FD003) solution to a final concentration of 100 units per ml and 25 ml sterile Egg Yolk Emulsion (FD045F). Mix well and pour into sterile Petri plates.

### Principle And Interpretation

MYP Agar Base is used for isolation and identification of *Bacillus cereus* in accordance with FDA BAM(1). *B. cereus* is ubiquitously present in soil, on vegetables, and in many raw and processed foods, meat, cereals, pasteurized fresh milk and powdered milk (2-4) and other processed foods. Under favourable conditions, the organism multiplies and causes gastrointestinal illness (4). It is implicated in two different forms of food poisoning; an emetic illness and a diarrhoeal illness. The emetic illness is mediated by a highly stable toxin that survives high temperature, exposure to trypsin, pepsin and pH extremes. The diarrhoeal illness is mediated by a heat and acid labile enterotoxin. Lecithinase activity is the key reaction in the differential identification of *B.cereus*, the most commonly encountered and important species in clinical laboratories, from the majority of the other *Bacillus* species. If unknown isolate produces lecithinase, *Bacillus cereus* can be presumptively identified by also observing colony morphology, hemolytic reactivity and motility tests.

MYP Agar Base (M636F) is recommended by FDA BAM to isolate and enumerate *B.cereus* from foods (5, 4). This medium differentiates *B.cereus* from other bacteria on the basis of lecithinase activity, mannitol fermentation and resistance to polymyxin (FD003) (5, 6).

Peptone and HM Peptone B provide nitrogen and carbon source, long chain amino acids, vitamins and other essential nutrients. Mannitol acts as the carbon source that upon fermentation yields yellow colour to the colonies. Egg yolk emulsion aids in the differentiation of lecithinase producing colonies, which are surrounded by a zone of white precipitate. Polymyxin B Sulphate acts as the inhibitor to restrict the growth of gram negative bacteria. These properties also help in the differentiation of *B.cereus* from other bacillus species (1).

### Quality Control

#### Appearance

Light yellow to light pink homogeneous free flowing powder

#### Gelling

Firm, comparable with 1.5% Agar gel

#### Colour and Clarity of prepared medium

Basal medium :Red coloured clear to slightly opalescent gel. After Addition of Egg Yolk Emulsion (FD045) : Light orange coloured opaque gel forms in Petri plates

#### Reaction

Reaction of 4.6% w/v aqueous solution at 25°C. pH : 7.2±0.2

Please refer disclaimer Overleaf.

**pH**

7.00-7.40

**Cultural Response**

Cultural characteristics observed with added Egg Yolk Emulsion (FD045) and Polymyxin B Sulphate (FD003) after an incubation at 32°C for 18-40 hours.

**Cultural Response**

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony	Lecithinase activity
<b>Cultural Response</b> <i>Bacillus cereus</i> ATCC 10876	50-100	luxuriant	>=50%	red	positive, opaque zone around the colony
<i>Bacillus subtilis</i> ATCC 6633	50-100	luxuriant	>=50%	yellow	negative
<i>Escherichia coli</i> ATCC 25922	50-100	none-poor	<=10%		
<i>Proteus mirabilis</i> ATCC 25933	50-100	luxuriant	>=50%	red	negative
<i>Pseudomonas aeruginosa</i> ATCC 27853	50-100	none-poor	<=10%		
<i>Staphylococcus aureus</i> ATCC 25923	50-100	luxuriant	>=50%	yellow	positive, opaque zone around the colony

**Storage and Shelf Life**

Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.

**Reference**

- 1.FDA, U.S. 1998. Bacteriological Analytical Manual. 8 ed. Gaithersburg, MD: AOAC International.
- 2.Bergdoll, M. S. 1981. Clin. Microbiol. Newsletter, 3: 85-87.
- 3.Centers for Disease Control: *Bacillus cereus*- Maine, MMWR, 35: 408-410, 1986.
- 4.Donovan, K. O. 1958. J. Appl. Bacteriol., 21.
- 5.Downes, F.P. and Ito, K. 2001. Methods For The Microbiological Examination of Foods. APHA, Food 4 ed. Washington, D.C.
- 6.Nygren, B. 1962. Acta Path. Microbiol. Scand, 56(Suppl. 1).

Revision : 03 / 2017

**Disclaimer :**

User must ensure suitability of the product(s) in their application prior to use. Products conform solely to the information contained in this and other related HiMedia™ publications. The information contained in this publication is based on our research and development work and is to the best of our knowledge true and accurate. HiMedia™ Laboratories Pvt Ltd reserves the right to make changes to specifications and information related to the products at any time. Products are not intended for human or animal diagnostic or therapeutic use but for laboratory, research or further manufacturing use only, unless otherwise specified. Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.