



## PRODUCT DATA SHEET

### CHROMOGENIC CEREUS SELECTIVE AGAR BASE(MYP)(AS PER ISO 7932) TM 1881

For selective isolation and enumeration of *Bacillus cereus*.

#### Composition

Ingredients	Gms/Ltr
Enzymatic digest of casein	10.000
Beef extract	1.000
D-Mannitol	10.000
Sodium chloride	10.000
Phenol red	0.025
Agar	15.000

\*Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers below 25°C and protect from direct Sunlight.

#### Instructions for Use

Dissolve 46.03 gms in 1000ml of distilled water. Gently heat to boiling with gentle swirling and dissolve the medium completely. Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes. Cool to 45°C - 50°C. Aseptically add rehydrated contents of 2 vials POLYMYXIN B SELECTIVE (TS 058) and add 100ml sterile EGG YOLK EMULSION (TS 002). Mix well and pour into sterile Petri plates.

**Appearance:** Red coloured clear to slightly opalescent gel.

After Addition of Egg Yolk Emulsion (TS 002) Light orange coloured opaque gel forms in Petri plates.

**pH (at 25°C):** 7.2 ± 0.2

#### Principle

*Bacillus cereus* Selective Agar Base is used for selective isolation and enumeration of *Bacillus cereus*. It is also recommended by the ISO committee for the enumeration of *Bacillus cereus*. *Bacillus cereus* is ubiquitously present in soil, food stuff, water and dust. *B.cereus* is the most commonly encountered and important species in clinical laboratories, from majority of other *Bacillus* species as under favorable conditions, the organism multiplies and cause gastrointestinal illness.

This medium differentiates *B.cereus* from other bacteria based on basis of lecithinase activity, mannitol fermentation and resistance to polymyxin. Lecithinase activity is the key reaction in differential identification of *B.cereus*. If unknown isolates produces lecithinase, *Bacillus cereus* can be presumptively identified by also colonial morphology, hemolytic reactivity reactivity and motility tests.

This medium contains enzymatic digest of casein and beef extract, which provide nitrogen source. Mannitol fermentation can be detected by phenol red, which yields yellow colour to the mannitol fermenting colonies due to acid production. Added egg yolk emulsion helps in differentiation of lecithinase producing colonies, which are surrounded by a zone of white precipitate. Addition of Polymyxin B Sulphate helps to restrict growth of gram-negative bacteria such as *Escherichia coli* and *Pseudomonas aeruginosa*. These differentiating media allow differentiation of *B.cereus* from other *Bacillus* species by its inability to ferment mannitol and poor sporulation. *B.cereus* dissimilates egg yolk and gives rise to typical bacilli form colonies with reddish zones and white halos. Acid produced by



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organisms other than *B.cereus* often diffuse through the medium, making it difficult to distinguish between mannitol fermenters and non-fermenters. So, it is advised to transfer the suspected colonies to a fresh medium to visualize the true reaction.

### Interpretation

Cultural characteristics observed with added Egg Yolk Emulsion (TS 002) and Polymyxin B Sulphate (TS 058) after an incubation at 30±2°C for 18-48 hours.

Organism	ATCC	Inoculum (CFU/ml)	Growth	Colony Appearance	Lecithinase activity
<i>Bacillus cereus</i>	10876	10 <sup>3</sup>	luxuriant	Red	+
<i>Bacillus subtilis</i>	6633	10 <sup>3</sup>	luxuriant	Yellow	-
<i>Proteus mirabilis</i>	25933	10 <sup>3</sup>	luxuriant	Red	-
<i>Staphylococcus aureus</i>	25923	10 <sup>3</sup>	luxuriant	Yellow	+

+: Opaque zone around the colony

-: No opaque zone around the colony

### References

- 1.Mossel D. A. A., Koopman M. J. and Jongerium E., 1967, Appl. Microbiol, 15:650.
- 2.Downes F. P. and Ito K., (Eds.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., APHA, Washington, D.C.
- 3.Nygren B., 1962, Acta Path. Microbiol. Scand., 56: Suppl. 1.
- 4.Donovan K. O., 1958, J. Appl. Bacteriol., 21:100.
- 5.International Organization for Standardization (ISO),7932:2004.Microbiology of food and animal feeding stuffs-Horizontal method for enumeration of presumptive *Bacillus cereus*-colony count technique at 30°C.