



## PEMBA

(*Bacillus Cereus Medium*)

### LAB 193

#### Description

This medium is based on the highly specific and sensitive PEMBA medium. It is used for the isolation and enumeration of *Bacillus cereus*. This formulation specifically enhances egg yolk precipitation and sporulation of *Bacillus cereus*. The bromothymol blue pH indicator gives clear visualisation of alkaline mannitol nonfermenting colonies and egg yolk precipitation indicative of *B. cereus*. The selectivity is provided by the polymyxin B supplement (X193) and provides excellent results for the majority of sample types.

Microscopic examination of presumptive *B. cereus* colony can confirm identity by presence of lipid globules in vegetative cells.

Typical Formula	g/litre
Peptone	1.0
Mannitol	10.0
Sodium chloride	2.0
Magnesium sulphate	0.1
Disodium hydrogen phosphate	2.5
Bromothymol blue	0.12
Sodium pyruvate	10.0
Agar	15.0

#### Method for Reconstitution

Weigh 41g of powder and disperse in 950ml of deionised water, allow the mixture to soak for 10 minutes, swirl to mix and sterilize by autoclaving for 15 minutes at 121°C for 15 minutes. Cool to 47°C and add two vials of X193 and 50ml of Egg Yolk Emulsion (X073) mix well and pour the plates. Dry the agar surface before inoculation.

**Appearance:** Yellow and opaque.

**pH:** 7.2 ± 0.2

**Minimum Q.C. organisms:** *Bacillus cereus* WDCM 00001.  
*Escherichia coli* WDCM 0003 (inhibition)

**Storage of Prepared Medium:** up to 7 days at 2-8°C in the dark.

**Inoculation:** Surface spreading or streaking for single colonies.

**Incubation:** 30°C aerobically for 24-48 hours.

GROWTH CHARACTERISTICS			
Organism	colony size (mm)	shape & surface	colour
<i>B. cereus</i>	3.0-4.0	F.C.R.D	Blue white halo
<i>B. subtilis</i>	2.0-3.0	F.C.R.D	Yellow
<i>B. licheniformis</i>	2.0	F.C.R.D	Yellow
<i>E. coli</i>	no growth		
<i>S. aureus</i>	1.0	CV.E.G.	Yellow white halo

#### References

- Holbrook, R. & Anderson, J.M. (1980). Can. J. Microbiol., 26(7) 753-759.  
Donovan, K.O. (1958). J. Appl. Bacteriol., 21(1) 100-103.  
Mossel, D.A.A., Koopman, M.J. & Jongerius. E. (1967). J. Appl. Bacteriol. 15(3) 650-653.