



## Plate Count Agar

M091S

### Intended Use:

Recommended for determining plate counts of microorganisms in food, water and waste water by pour plate technique. It is recommended by BIS Committee under the specifications IS 5402:2012, ISO 4833:2003 & 11133:2014 /Amd.2 : 2020 (E).

### Composition\*\*

#### ISO specification - Plate Count Agar (PCA)

Ingredients	g / L
Enzymatic digest of casein	5.000
Yeast extract	2.500
Glucose(Dextrose)	1.000
Agar	15.000
Final pH ( at 25°C)	7.0±0.2

#### Plate Count Agar

Ingredients	g / L
Tryptone #	5.000
Yeast extract	2.500
Glucose(Dextrose)	1.000
Agar	15.000
Final pH ( at 25°C)	7.0±0.2

#### M091S

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

# Equivalent to Enzymatic digest of casein

### Directions

Suspend 23.5 gram in 1000 ml purified / 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. Mix well and pour into sterile Petri plates.

### Principle And Interpretation

Plate Count Agar originally formulated by Buchbinder et al (1) which is recommended by APHA (2-4) FDA (5) and ISO committee (6,7). Present formulation is recommended by BIS (8) for enumeration of microorganisms in food, animal feeding, water and wastewater. Tryptone provides amino acids and other complex nitrogenous substances. Yeast extract supplies Vitamin B complex. BIS recommends pour plate technique. The samples are diluted and appropriate dilutions are placed in petri plates. Sterile molten agar is added to these plates and plates are rotated gently to ensure uniform mixing of the sample with agar. Plate Count Agar is also suitable for finding out bacterial count from sterile rooms.

### Type of specimen

Food and animal feeding stuffs; Water samples

### Specimen Collection and Handling:

For food and animal feeding stuffs samples, follow appropriate techniques for sample collection and processing as per guidelines (3,4). For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (2). After use, contaminated materials must be sterilized by autoclaving before discarding.

### Warning and Precautions :

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

### Limitations :

1. Individual organisms differ in their growth requirement and may show variable growth patterns on the medium.
2. Each lot of the medium has been tested for the organisms specified on the COA. It is recommended to users to validate the medium for any specific microorganism other than mentioned in the COA based on the user's unique requirement.

### Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

### Quality Control

#### Appearance

Cream to yellow coloured homogeneous free flowing powder

**Gelling**

Firm, comparable with 1.5% Agar gel

**Colour and Clarity of prepared medium**

Light yellow coloured clear to slightly opalescent gel forms in Petri plates.

**Reaction**

Reaction of 2.35% w/v aqueous solution at 25°C. pH : 7.0±0.2

**pH**

6.80-7.20

**Cultural Response**

**Productivity** : Cultural response was observed after an incubation at 30 ± 1°C for 72 ± 3 hours. Recovery rate is considered as 100% for bacteria growth on Reference medium - Soyabean Casein Digest Agar (Tryptone Soya Agar).

Organism	Inoculum (CFU)	Growth	Recovery
<b>Productivity</b>			
** <i>Bacillus spizizenii</i> ATCC 6633 (00003*)	50-100	Luxuriant	>=70%
<i>Escherichia coli</i> ATCC 25922 (00013*)	50-100	Luxuriant	>=70%
<i>Escherichia coli</i> ATCC 8739 (00012*)	50-100	Luxuriant	>=70%
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC 25923 (00034*)	50-100	Luxuriant	>=70%

Key : \*Corresponding WDCM numbers, \*\*Formerly known as *Bacillus subtilis* subsp. *spizizenii*

**Storage and Shelf Life**

Store between 10-30°C in a tightly closed container and the prepared medium at 20-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Use before expiry date on the label. Product performance is best if used within stated expiry period.

**Disposal**

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (9,10).

**Reference**

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Revision :03 / 2024

**Disclaimer :**

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