TECHNICAL DATA SHEET

AS-1328

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Plate Count Agar (PCA)

Standard Methods Agar | Tryptone Glucose Yeast Extract Agar

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Technical Review	Hassan Salimi, Technical Director, AuSaMicS Pty Ltd (18+ years culture media formulation)

Product Identification

Product Name	Plate Count Agar (PCA)
Synonyms	Standard Methods Agar; Tryptone Glucose Yeast Extract Agar
Catalogue Number	AS-1328
HS Code	3822.00
Format	Dehydrated culture medium powder
Manufacturer	AuSaMicS Pty Ltd, Melbourne, Victoria, Australia

Intended Use

Plate Count Agar is a non-selective medium intended for the enumeration of viable aerobic microorganisms (Total Viable Count) in food, water, environmental, and pharmaceutical samples. It is the reference medium specified by ISO 4833, FDA-BAM, and APHA Standard Methods for aerobic plate count procedures.

Mode of Action

Tryptone and yeast extract supply amino acids, peptides, and B-vitamin growth factors supporting a broad spectrum of non-fastidious heterotrophic bacteria. Glucose provides a readily available carbon/energy source that promotes rapid, discrete colony development. Because the formulation contains no selective, inhibitory, or indicator agents, essentially all viable aerobic organisms capable of growth under the specified incubation conditions will form countable colonies — the defining property of a total (non-differential) count medium.

Formulation (per litre)

Ingredient	Quantity	Function
Tryptone	5.0 g	Nitrogen / amino acid source
Yeast Extract	2.5 g	Vitamins, growth factors
Glucose (Dextrose)	1.0 g	Fermentable carbon / energy source
Agar	15.0 g	Solidifying agent

Total: 23.5 g/L **Final pH: 7.0 ± 0.2 at 25°C**

Preparation

- Suspend 23.5 g of dehydrated medium in 1 L purified water
- Heat with agitation until completely dissolved
- Sterilise by autoclaving at 121°C for 15 minutes
- Cool to 45–50°C, mix well before dispensing
- Pour plates or dispense as required; allow to set

Incubation Conditions

Parameter	Condition
Temperature	30–35°C
Time	48–72 hours
Atmosphere	Aerobic

Quality Control — Cultural Response

Organism	ATCC No.	Inoculum (CFU/plate)	Expected Result
Escherichia coli	25922	≤ 100	Good growth, discrete colonies
Staphylococcus aureus	25923	≤ 100	Good growth, discrete colonies
Bacillus subtilis	6633	≤ 100	Good growth, discrete colonies
Candida albicans	10231	≤ 100	Good growth (extended incubation)

Physical & Performance Specifications

Appearance (dehydrated)	Fine, homogeneous, light beige to tan powder
Appearance (prepared)	Clear to slightly opalescent gel
Gel Strength	Firm, clear gel suitable for surface and pour-plate techniques
Colony Recovery	≥ 70% relative to reference medium (QC strains)

Storage & Shelf Life

Dehydrated Medium	Store at 10–30°C, tightly closed, protected from moisture and light. Shelf life 24 months from manufacture.

Prepared Plates Store at 2–8°C, protected from light. Recommended use within 7 days of pouring.

Regulatory & Standards Compliance

- ISO 4833-1/2:2013 — Enumeration of microorganisms by colony count
- FDA Bacteriological Analytical Manual (BAM), Chapter 3 — Aerobic Plate Count
- APHA Standard Methods for the Examination of Water and Wastewater
- USP <61> / EP 2.6.12 — Microbiological Examination of Non-Sterile Products (TAMC)

Literature & References

- Buchbinder, L., Solowey, M., Phelps, E.B. (1951). Studies on plate counting. Public Health Reports, 66(11), 327–329.
- ISO 4833-1:2013. Microbiology of the food chain — Horizontal method for the enumeration of microorganisms. International Organization for Standardization, Geneva.
- U.S. Food and Drug Administration. Bacteriological Analytical Manual (BAM), Chapter 3: Aerobic Plate Count.
- American Public Health Association. Standard Methods for the Examination of Water and Wastewater (latest edition). APHA, Washington DC.
- International Organization for Standardization. ISO 11133:2014 — Microbiology of food, animal feed and water: Preparation, production, storage and performance testing of culture media.
- United States Pharmacopeia. USP <61> Microbiological Examination of Nonsterile Products: Microbial Enumeration Tests.