

STANDARD METHODS AGAR WITH POWDERED MILK (ISO 4833)

CAT Nº: 1033

For bacterial plate counts of microorganisms from milk and dairy derivatives APHA* Formula

FORMULA IN g/l

Tryptone	5.00	Yeast extract	2.50
Dextrose	1.00	Skimmed milk powder	1.00
Bacteriological agar	15.0		

Final pH 7.0 ± 0.2 at 25°C

PREPARATION

Suspend 24.5 grams of medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Dispense into appropriate containers and sterilize in autoclave at 121°C for 15 minutes. Cool to 50°, mix well and dispense into plates. The color of the prepared medium is clear amber, slightly opalescent.

The dehydrated medium should be homogeneous, free-flowing and beige in color. If there are any physical changes, discard the medium.

* APHA: American Public Health Association Inc.

USES

STANDARD METHODS AGAR WITH POWDERED MILK is used for enumerating microorganisms in dairy products. It is used with the same techniques as the Standard Methods Agar.

Tryptone is a source of nitrogen, vitamins and minerals; Yeast extract provides vitamins especially the B-group. Dextrose is a source of carbohydrate as energy source. Skimmed milk is a source of lactose and casein. Bacteriological agar is the solidifying agent.

Dispense a portion of each test dilution (e.g., 0.1, 1.0 ml) into separate sterile Petri dishes. Add 10 – 12 ml of tempered (45°C) Standard Methods Agar with Powdered Milk to Petri dishes containing test dilutions. Swirl the dishes to thoroughly mix the agar and test dilution. Allow plates to cool and solidify.

Incubate at 35 ± 2°C for 18-24 hours.

APHA recommends the use of pour plate technique with this media. In general, 1 ml of the appropriate sample test dilution is added to the sterile medium at a temperature of 44 – 45°C, mixed gently and poured into sterile Petri dishes. Sterile molten agar is added to these plates and plates are rotated gently to ensure uniform mixing of the sample with agar. Allow plates to cool and solidify. The poured plate count method is preferred to the surface inoculation method, since it gives higher results. Plate Count Agar is also suitable for enumerating bacterial count of sterile. Count colonies on all plates containing 30 – 300 colonies. Calculate bacterial count per milliliter of the sample by multiplying the average number of colonies per plate by the reciprocal of the dilution used. Report the count as CFU/ml.

Incubate the Petri dishes at 35 ± 2°C for 18 – 24 hours and count the developed colonies.



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MICROBIOLOGICAL TEST

The following results were obtained in the performance of the medium from type cultures after incubation at a temperature of $35 \pm 2^{\circ}\text{C}$ and observed after 18-24 hours

Microorganisms	Growth
<i>Escherichia coli</i> ATCC 25922	Good
<i>Staphylococcus aureus</i> ATCC 25923	Good
<i>Staphylococcus epidermidis</i> ATCC 12228	Good

BIBLIOGRAPHY

R.C. MARSHALL (1.993) Standard Methods for the Microbiological examination of dairy products, 16th Ed. (American Public Health Association, Washington, D.C.). England and Wales. The Dairy Products (Hygiene) Regulations 1995 Statutory Instrument No. 1086. London: HMSO, 1995. British Standards Institution. BS 4285 Microbiological examination for dairy purposes. Section 2.1 Enumeration of microorganisms by poured plate technique for colony count. London: BSI, 1984.

STORAGE

Once opened keep powdered medium closed to avoid hydration.

