

Standard Methods Agar with Powdered Milk APHA/ISO

Cat. 1033

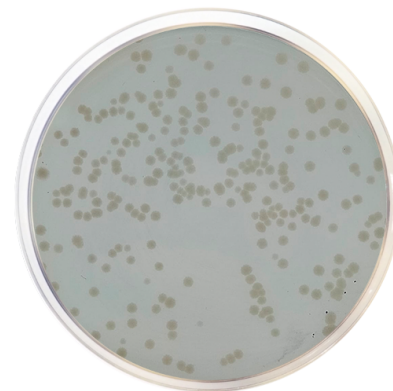
For bacterial plate counts of microorganisms from milk and dairy derivatives.

Practical information

Applications	Categories
Non selective enumeration	General use

Industry: Dairy products

Regulations: APHA / ISO 4833



Principles and uses

Standard Methods agar with Powdered Milk is recommended by APHA and ISO 4833 for enumerating microorganisms in dairy products. It is used with the same techniques as the Standard Methods Agar.

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

Formula in g/L

Enzymatic digest of casein	5	Bacteriological agar	15
Glucose anhydrous	1	Skimmed milk powder	1
Yeast extract	2,5		

Typical formula g/L * Adjusted and/or supplemented as required to meet performance criteria.

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 44-47 °C, mix well and dispense into plates.

Instructions for use

Pour plate technique:

- Inoculate 1 ml of the sample, (if necessary 2 continuous decimal dilutions to be able to count between 15-300 colonies per plate).
- Put 12-15 ml per plate of agar cooled to 44-47 °C in each Petri dish. The time of preparation shouldn't exceed 45 minutes.
- Invert the plates and incubate at 30±1°C for 72±3 hours.
- Post incubation, count the colonies.

Surface plating technique:

- Inoculate 0,1 ml of the sample, (if necessary 2 continuous decimal dilutions to be able to count between 15-300 colonies per plate).
- Spread the inoculum on the surface of the agar plate.
- Leave the plates with the caps on for 15 minutes to allow the inoculum to be absorbed into the agar.
- Invert the plates and incubate at 30±1 °C for 72±3 hours.
- After the incubation, count the colonies.

According to APHA, incubate the Petri dishes at 32±2°C for 18–48 hours and count the developed colonies. Consult the specific texts of APHA for the particular sample applications.

Quality control

Solubility	Appareance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25°C)
w/o rests	Fine powder	Beige	Clear amber, slightly opalescent	7,0 ± 0,2

Microbiological test

According to ISO 11133; *Escherichia coli* ATCC 8739, *Staphylococcus aureus* ATCC 6538 and *Bacillus subtilis* ATCC 6633:

Incubation conditions: (30±1 °C / 72±3 h).

Inoculation conditions: Productivity quantitative (100±20. Min. 50 cfu).

Reference media: TSA.

According to APHA; *Escherichia coli* ATCC 8739, *Staphylococcus aureus* ATCC 25923 and *Staphylococcus epidermidis* ATCC 12228:

Incubation conditions: (32±2 °C / 18-48 h).

Microorganisms	Specification
<i>Staphylococcus epidermidis</i> ATCC 12228	Good growth
<i>Staphylococcus aureus</i> ATCC 25923	Good growth
<i>Staphylococcus aureus</i> ATCC 6538	Good growth >70%
<i>Bacillus subtilis</i> ATCC 6633	Good growth >70%
<i>Escherichia coli</i> ATCC 8739	Good growth >70%

Storage

Temp. Min.:2 °C

Temp. Max.:25 °C

Bibliography

ISO 4833-1:2013. Microbiology of the food chain - Horizontal method for the enumeration of microorganisms - Part 1: Colony count at 30 degrees C by the pour plate technique

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