Plate Count Agar/Standard Methods Agar (Tryptone Glucose Yeast Agar)

Intended Use

Plate Count Agar and Standard Methods Agar (Plate Count Agar; Tryptone Glucose Yeast Agar) are used for obtaining microbial plate counts from milk and dairy products, foods, water and other materials of sanitary importance.

Summary and Explanation

Plate Count Agar and Standard Methods Agar are made according to the American Public Health Association (APHA) formulation.[1] They are recommended for obtaining plate counts for milk and other dairy products and may also be used to determine the sanitary quality of foods, water and other materials.[1-5]

Each lot of dehydrated medium base is subjected to the APHA quality control test and has met the APHA requirements.[1,6] Appropriate references should be consulted for standard plate count procedures recommended by the APHA and other agencies.[1-5]

The **Hycheck**™ hygiene contact slide is a double-sided paddle containing two agar surfaces for immersing into fluids or sampling surfaces. There are two slides with Plate Count Agar: one contains Plate Count Agar on one side of the slide and the medium with triphenyltetrazolium chloride (TTC) on the other side; the second slide contains Plate Count Agar with TTC on both sides.

Principles of the Procedure

Enzymatic digest of casein provides the amino acids and other complex nitrogenous substances necessary to support bacterial growth. Yeast extract primarily supplies the B-complex vitamins, and dextrose is an energy source. TTC is reduced to the insoluble formazan inside the bacterial cell producing red-colored colonies.

Formula

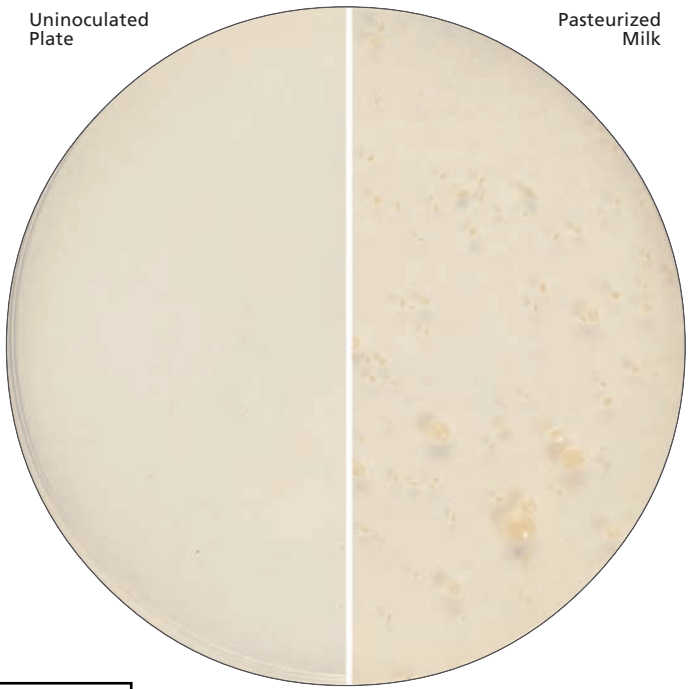
Difco™ Plate Count Agar or BBL™ Standard Methods Agar

Approximate Formula* Per Liter		
Pancreatic Digest of Casein	5.0	g
Yeast Extract	2.5	g
Dextrose	1.0	g
Agar	15.0	g

**Adjusted and/or supplemented as required to meet performance criteria.*

Directions for Preparation from Dehydrated Product

1. Suspend 23.5 g of the powder in 1 L of purified water. Mix thoroughly.



User Quality Control

NOTE: Differences in the Identity Specifications and Cultural Response testing for media offered as both **Difco**™ and **BBL**™ brands may reflect differences in the development and testing of media for industrial and clinical applications, per the referenced publications.

Identity Specifications

Difco™ Plate Count Agar

Dehydrated Appearance:	Light beige, free-flowing, homogeneous.
Solution:	2.35% solution, soluble in purified water upon boiling. Solution is light amber, slightly opalescent.
Prepared Appearance:	Light amber, slightly opalescent.
Reaction of 2.35% Solution at 25°C:	pH 7.0 ± 0.2

Cultural Response

Difco™ Plate Count Agar

Prepare the medium per label directions. Inoculate using the pour plate method and incubate at 35 ± 2°C for 18-48 hours.

ORGANISM	ATCC™	INOCULUM CFU	RECOVERY
Lacbobacillus johnsonii	11506	30-300	Good
Staphylococcus aureus	25923	30-300	Good

Identity Specifications

BBL™ Standard Methods Agar

Dehydrated Appearance:	Fine to medium fine, may contain small tan and white flecks, homogeneous, free of extraneous material.
Solution:	2.35% solution, soluble in purified water upon boiling. Solution is light to medium, yellow to tan, clear to slightly opalescent.
Prepared Appearance:	Light to medium, yellow to tan, clear to slightly opalescent.
Reaction of 2.35% Solution at 25°C:	pH 7.0 ± 0.2

Cultural Response

BBL™ Standard Methods Agar

Prepare the medium per label directions. Inoculate using the pour plate method and incubate *Bacillus stearothermophilus* at 55-60°C and 35 ± 2°C for all other organisms for 18-48 hours.

ORGANISM	ATCC™	INOCULUM CFU	RECOVERY
Bacillus subtilis	6633	30-300	Good
Bacillus stearothermophilus	7953	30-300	Good
Enterococcus hirae	10541	30-300	Good
Escherichia coli	25922	30-300	Good
Lactobacillus rhamnosus	7469	30-300	Good
Lactobacillus delbruecki subsp. *lactis*	122315	30-300	Good

2. Heat with frequent agitation and boil for 1 minute to completely dissolve the powder.
3. Autoclave at 121°C for 15 minutes.
4. Test samples of the finished product for performance using stable, typical control cultures.

Procedure

Consult appropriate references for information regarding the processing and inoculation of food, water samples and other materials.[1-5]

Liquefy the medium in pour tubes and bottles by heating in boiling water. Cool to 45-50°C.

Usually 1 mL samples of appropriate dilutions of the test sample are pipetted into sterile Petri dishes and molten, cooled medium is added followed by gently mixing to distribute the sample dilution throughout the agar. Incubate hardened plates for 48 ± 3 hours at 32 ± 1°C (dairy products) or 35 ± 0.5°C (foods) in an aerobic atmosphere.

Expected Results

Follow recommended procedures for the counting of colonies and the reporting of results.[1-5]

References

1. Marshall (ed.). 1993. Standard methods for the examination of dairy products, 16th ed. American Public Health Association, Washington, D.C.
2. Downes and Ito (ed.). 2001. Compendium of methods for the microbiological examination of foods, 4th ed. American Public Health Association, Washington, D.C.
3. Clesceri, Greenberg and Eaton (ed.). 1998. Standard methods for the examination of water and wastewater, 20th ed. American Public Health Association, Washington, D.C.
4. Horwitz (ed.). 2000. Official methods of analysis of AOAC International, 17th ed. vol. 1. AOAC International, Gaithersburg, Md.
5. U.S. Food and Drug Administration. 1995. Bacteriological analytical manual, 8th ed. AOAC International, Gaithersburg, Md.
6. Marth (ed.). 1978. Standard methods for the examination of dairy products, 14th ed. American Public Health Association, Washington, D.C.

Availability

Difco™ Plate Count Agar

AOAC | BAM | CCAM | COMPF | EPA | ISO | SMD | SMWW | USDA

Cat. No.	247930	Dehydrated – 100 g
	247940	Dehydrated – 500 g
	247910	Dehydrated – 2 kg
	247920	Dehydrated – 10 kg

Difco™ Hycheck™ Hygiene Contact Slides

Cat. No.	290531	Plate Count Agar // Plate Count Agar with TTC (20 slides)*
	290451	Plate Count Agar with TTC // Plate Count Agar with TTC (20 slides)*

BBL™ Standard Methods Agar

AOAC | BAM | CCAM | COMPF | EPA | ISO | SMD | SMWW | USDA

Cat. No.	212455	Dehydrated – 100 g
	211638	Dehydrated – 500 g
	211641	Dehydrated – 5 lb (2.3 kg)
	298084	Dehydrated, **LitrePak**™ – 20 × 1.0 L

United States and Canada

Cat. No.	297030	Prepared Plates – Pkg. of 20*
	221030	Prepared Pour Tubes – Pkg. of 10
	299094	Prepared Bottles – 10 × 200 mL
	299102	Prepared Bottles – 10 × 500 mL

Europe

Cat. No.	254483	Prepared Plates – Pkg. of 20*

Japan

Cat. No.	251536	Prepared Plates – Pkg. of 20*
	251543	Prepared Plates – Ctn. of 100*
	251546	Prepared Plates (150 × 15 mm-style) – Pkg. of 24*
	251506	Prepared **RODAC**™ Plates – Pkg. of 30*

*Store at 2-8°C.