Reference: 250774TI **Technical Data Sheet**

Product: # Plate Count Agar (PCA) TLHTh double wrap

Specification

General purpose medium with neutralisers for isolation and enumeration microorganisms in surfaces.

Presentation

	Packaging Details	Shelf Life	Storage
30 Contact Plates/Ird. Contact Plates - Double Wrapping with: 15 ± 2 ml	1 box with 5 blisters (base of aluminium, PVDC and bag) with 6 contact plates/blister. Every pack exhibitis an irradiation indicator (8-14kGy).	7 months	2-25 ºC

Composition

Composition (g/l):

Peptone from casein	5.0
Yeast extract	2.5
D(+) Glucose	1.0
Histidin	1.0
Lecithine	0.7
Polysorbate 80	5.0
Sodium thiosulfate	0.5
Agar	15.0

Description /Technique

Description:

The Plate Count Agar formulation is according to that of Buchbinder *et al.* as recommended in their study of media for the plate count of microorganisms.

The original formulation of the standardized agar for dairy microbiology has been modified in order to avoid the addition of milk. This new composition allows the growth of most microorganisms without any further additions.

This medium's formulation is equivalent to that escribed by the 'Standard Methods for the Examination of Dairy products', the USP's 'Tryptone Glucose Yeast Agar', the 'Deutsche Landswirtchaft' and to the APHA and AOAC's Plate Count Agar. This is the medium of choice for the plate count of any type of sample.

The addition of he neutralizing agents TLHTh (Tween 80 - Lecithin - Histidine - Sodium Thiosulphate) may inactivate a variety of disinfectants.

* The combination of lecithin, polysorbate 80 and histidine neutralizes aldehydes and phenolic compounds.
* The combination of lecithin and polysorbate 80 neutralizes the quaternary ammonium compounds.
* The polysorbate 80 neutralizes hexachlorophene and mercurial derivates.
* Sodium thiosulphate neutralizers halogen compounds.
* Lecithin neutralizes clorhexidine.
* Histidine neutralizes formaldehyde.

Technique

Contact plates are used in the microbiological control of disinfection and cleaning of surfaces. It acts simultaneously as a sampler and incubation culture medium without the need for any other intermediate steps.

The plates come in a form appropriate for this function and can be used with different culture media depending on the type of microbe that needs to be controlled. On average the plates provide a contact surface of approximately 25 cm2.

To use, remove the cover and gently press the culture medium on the surface to be controlled, ensuring contact between the two surfaces. The Contact plate is removed and covered with the lid to prevent air contamination. It is advisable that the lid is secured with adhesive tape and the bottom labelled with the sampling data (place, date and time).

If the sample surfaces are rough, the contact plates will not make good contact, even when the pressure is increased. In these cases it is advisable to delineate an sample surface area of 25 cm squared and rub this area vigorously with a wet sterile swab and then rub the swab over the Contact plate.

If verifying the effectiveness of a cleaning or disinfection process, contact plates should be used within two hours after the end of the process, ensuring that the sample surface is dry. It is advisable to always include positive controls, sampling the area before disinfection or dirty areas beside the disinfected area.

The technician will determine the frequency of sampling and disinfection according to performance criteria. Apply the agar directly onto surface to be monitored ensuring that the pressure is distributed over the whole plate for 10 seconds. Clean the surface where the sample was collected in order to remove any traces of agar.

The inoculated plates are incubated at 30 º C for 48-72 hours and examined daily.

Note: Contact plates are used for monitoring the microbiological contamination of surface and air inside cleanrooms, isolators, RABS, food industries and hospitals. The double/triple irradiated wrapping ensures that the package itself doesn't contaminate the environment as the first wrapper is removed just before entering the clean area.

Quality control

Physical/Chemical control

Color : Yellowish pH: 7.2 ± 0.2 at 25ºC

Microbiological control

Inoculate:Practical range 100 ± 20 CFU. Min. 50 CFU (Productivity).

Aerobiosis. Incubation at 30 ± 1 ºC, reading at 72 ± 3h

Microbiological control according to ISO 11133:2014/A1:2018.

Microorganism	Growth
Bacillus subtilis ATCC® 6633, WDCM 00003	Good (≥70%)
Escherichia coli ATCC® 8739, WDCM 00012	Good (≥70%)
L. monocytogenes ATCC® 35152, WDCM 00109	Good (≥70%)
Staphylococcus aureus ATCC® 6538, WDCM 00032	Good (≥70%)

Sterility Control

Incubation 48 hours at 30-35 ºC and 48 hours at 20-25 ºC: NO GROWTH.
Check at 7 days after incubation in same conditions.

Bibliography

· ATLAS, R.M. & L.C. PARKS (1993) Handbook of Microbiological Media. CRC Press, Inc. London.
· BUCHBINDER, L., Y. BARIS & L. GOLDSTEIN (1953) Further studies on new milk-free media for the standard plate count of dairy products. Am. J. Public Health 43:869-872.
· CLESCERI, L.S., A.E.GREENBERG and A.D. EATON (1998) Standard Methods for the Examination of Water and Wastewater. 20th ed., APHA, AWWA, WPCF. Washington.
· DIN 10192 (1971) Prüfungesbestimmungen für Milch und Milcherzeugnisse. Deutsche Landwirtsachft, Fachbereit und Ernahrung.
· DOWNES, F.P. & K. ITO (2001) Compendium of Methods for the Microbiological Examination of Foods. 4th ed., APHA, Washington.
· FIL/IDF Standards 3 (1958), 100, 101 (1981), 109 (1982) and 132 (2004).
· HORWITZ, W. (2000) Official Methods of Analysis. AOAC International. Gaithersburg.
· IFU Method No 6 (1996) Mesophilic, thermoduric and thermophilic bacteria: Spores Count. D-1 Mesophilic Aerobic Sporeforming bacteria: Spores count.
· ISO 4833 (2003) Microbiology of food and animal feeding stuffs. Horizontal method for the enumeration of microorganisms. Colony count technique at 30ºC.
· ISO 8552 (2004) Milk - Estimation of psychrotrophic microorganisms. Colony count technique at 21ºC (Rapid method).
. ISO 11133:2014/ Adm 1:2018. Microbiology of food, animal feed and water. Preparation, production, storage and performance testing of culture media.
· ISO 17410 (2019) Horizontal method for the enumeration of psychrotrophic microorganisms.
· MARSHALL, R.T. (1992) Standard Methods for the Examination of Dairy Products. 16th ed. APHA. Washington.