TECHNICAL DATA SHEET

POTATO DEXTROSE AGAR (PDA)

ENUMERATION OF YEASTS AND MOLDS

1 INTENDED USE

Potato Dextrose Agar (PDA) is recommended in standards applied to cosmetic products. It can be used as selective media after addition of chloramphenicol or for applicability trials.
This media is also adapted to the growth of yeasts and molds.

The typical composition is that defined in the Annex of the standard NF EN ISO 18416.

2 HISTORY

In the course of a comparative test on several culture media in 1938, Shadwick found that Potato Dextrose Agar gave good results for the enumeration of yeasts and molds in butter. This medium is also recommended by the United States Pharmacopeia for the control of pharmaceutical products.

3 PRINCIPLES

The concentrations of glucose and potato extract favor the growth of yeasts and molds.

The acid pH inhibits most bacteria.

The potato extract used avoids the necessity to prepare a potato infusion.

4 TYPICAL COMPOSITION

The composition can be adjusted in order to obtain optimal performance.

For 1 liter of media :

- Potato extract (*) ..... 4,0 g
- Glucose ..... 20,0 g
- Bacteriological agar..... 15,0 g

pH of the ready-to-use media at 25 °C : 5,6 ± 0,2.

(*) 4,0 g of potato extract corresponds to 200g of potato infusion.

5 PREPARATION

Preparation of dehydrated media :

- Dissolve 39,0 g of dehydrated media (BK095) in 1 liter of distilled or demineralized water.
- Slowly bring to boiling, with constant agitation until complete dissolution.
- Dispense in tubes or vials.
- Sterilize in an autoclave at 121 °C for 15 minutes.
- Cool and maintain the media in molten state at 44-47 °C.

✓ **Reconstitution :**
39,0 g/L

✓ **Sterilization :**
15 min at 121 °C

Use of ready-to-melt media

- Melt the media (if it was prepared in advance) or the ready-to-melt media (BM186) for the least amount of time needed to achievee total liquefaction.
- Cool and maintain the media in a molten state at 44-47 °C.

6 INSTRUCTIONS FOR USE

Preparation of *Aspergillus* spores (NF EN ISO 11930)
- Inoculate a thallus or a suspension of mold spores.
- Incubate at 20-25 °C for 7 to 11 days.

Evaluation of the antimicrobial protection of a cosmetic product (NF EN ISO 11930)
Transfer 1 mL of the validation trial containing *Aspergillus brasiliensis* and a control into sterile Petri plates.
- Pour roughly 15 mL of molten media per plate.
- Homogenize by swirling and let solidify on a cold surface.
- Incubate at 20-25 °C for 3 to 5 days.

✓ **Inoculation :**
1 mL in pour plates

✓ **Incubation :**
3 to 5 days at 20-25 °C

7 RESULTS

Count the yeasts and molds.

8 QUALITY CONTROL

Dehydrated media : whitish powder, free-flowing and homogeneous.
Prepared media : amber agar.

Typical culture response :

Microorganisms		Temperature and incubation time	Growth (Productivity Ratio : P_R)
Aspergillus brasiliensis	WDCM 00053	72 h at 20-25 °C	$P_R \geq 70$ %
Candida albicans	WDCM 00054	48 h at 30-35 °C	$P_R \geq 70$ %

9 STORAGE / SHELF LIFE

Dehydrated media : 2-30 °C.
Ready-to-melt media in vials : 2-25 °C.
The expiration dates are indicated on the labels.

Prepared media in vials (*) : 180 days at 2-25 °C.
Prepared media in plates (*) : 30 days at 2-8 °C.
(*) Benchmark value determined under standard preparation conditions, following manufacturer's instructions.

10 PACKAGING

Dehydrated media
500 g bottle BK095HA

Ready-to-melt media
10 x 200 mL vials BM18608

11 BIBLIOGRAPHY

Beever, R.E., and Bollard, E.G. 1970. The nature of the stimulation of fungal growth by potato extract. J. Gen. Microbiology, 60: 273-279.

NF EN ISO 18416. Février 2016. Cosmétiques. Microbiologie. Détection de *Candida albicans.*

NF EN ISO 11930. Juin 2012. Cosmétiques. Microbiologie. Évaluation de la protection antimicrobienne d'un produit cosmétique.

12 ADDITIONAL INFORMATION

The information provided on the labels take precedence over the formulations or instructions described in this document and are susceptible to modification at any time, without warning.

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