

# TECHNICAL DATA SHEET

## YEAST EXTRACT AGAR

### ENUMERATION OF CULTURABLE MICROORGANISMS IN WATER

#### 1 INTENDED USE

Yeast Extract Agar is used in water microbiology for the enumeration of culturable microorganisms by colony count at 36 and 22°C. The method is intended to measure the functional efficiency of drinking water treatment, and more generally, all types of water. It is particularly well adapted to the analysis of water destined for human consumption, including bottled and natural mineral waters and swimming pool water.

The typical composition corresponds to the composition found in the mandatory applications standards NF EN ISO 6222 and NF T90-421.

#### 2 HISTORY

Yeast Extract Agar is derived from Plate Count Agar (PCA). It does not contain glucose.

#### 3 PRINCIPLES

The nutrients supplied by Tryptone and vitamins from yeast extract favor the growth of most bacteria.

#### 4 TYPICAL COMPOSITION

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

For 1 liter of media :

- Tryptone ..... 6,0 g
- Yeast extract ..... 3,0 g
- Bacteriological agar..... 10,0 g

pH of the ready-to-use media at 25 °C : 7,2 ± 0,2.

#### 5 PREPARATION

##### Preparation from dehydrated media :

- Dissolve 19,0 g of dehydrated media (BK153) in 1 liter of distilled or demineralized water.
- Slowly bring to boiling, stirring with constant agitation until complete dissolution.
- Dispense in tubes or vials.
- Sterilize in an autoclave at 121 °C for 15 minutes.
- Cool and maintain in a molten state at 44-47 °C.

✓ **Reconstitution :**  
19,0 g/L

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

##### Use of ready-to-melt media :

- Melt the media (if it was prepared in advance) or use the ready-to-melt media (BM068) for the minimum amount of time necessary to achieve total liquefaction.
- Cool and maintain at 44-47 °C.

## 6 INSTRUCTIONS FOR USE

### Enumeration of culturable microorganisms in water (NF EN ISO 6222)

- Transfer 1 mL of the product to analyze and its serial tenfold dilutions to sterile Petri plates.
- Pour 10 to 15 mL of molten media per plate.
- Mix by swirling and let solidify on a cold surface.
- Incubate a series at  $36 \pm 2$  °C for  $44 \pm 4$  hours, and another series at  $22 \pm 2$  °C for  $68 \pm 4$  hours.

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

✓ **Incubation :**  
 $44 \pm 4$  h at  $36 \pm 2$  °C  
and  $68 \pm 4$  h at  $22 \pm 2$  °C

#### NOTE :

A volume of 2 mL maximum of water to test can be inoculated per plate.

### Enumeration of culturable microorganisms in swimming pool water (NF T 90-421)

- Transfer 1 mL of the water to test and its serial dilutions to empty, sterile Petri plates.
- Pour in roughly 15 mL per plate of molten media.
- Mix well and let solidify on a cool surface.
- Incubate at  $36 \pm 2$  °C for  $44 \pm 4$  hours.

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

✓ **Incubation :**  
 $44 \pm 4$  h at  $36 \pm 2$  °C

## 7 RESULTS

Count plates containing less than 300 colonies.

The plates can be kept 48 hours at 2-8°C before enumeration if necessary for laboratory organization.

See ANNEX 1 : PHOTO SUPPORT.

## 8 QUALITY CONTROL

**Dehydrated media :** cream powder, free-flowing and homogeneous.

**Prepared media :** light amber agar.

Typical culture response after 44 hours of incubation at 36 °C (NF EN ISO 11133) :

Microorganisms		Growth (Productivity Ratio :)
<i>Escherichia coli</i>	WDCM 00013	$P_R \geq 70$ %
<i>Bacillus subtilis</i> ssp. <i>spizizenii</i>	WDCM 00003	$P_R \geq 70$ %

## 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 or tubes (\*) :** 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

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### Dehydrated media :

500 g bottle ..... BK153HA

### Ready-to-use media :

10 x 200 mL vials ..... BM06808

## 11 BIBLIOGRAPHY

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NF EN ISO 6222. Juillet 1999. Qualité de l'eau. Dénombrement des micro-organismes revivifiables. Comptage des colonies par ensemencement dans un milieu de culture nutritif gélosé.

NF T90-421. Aout 2006. Qualité de l'eau. Examens bactériologiques des eaux de piscines.

## 12 ADDITIONAL INFORMATION

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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.

Document code : YEAST EXTRACT AGAR\_ENv6  
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## ANNEX 1 : PHOTO SUPPORT

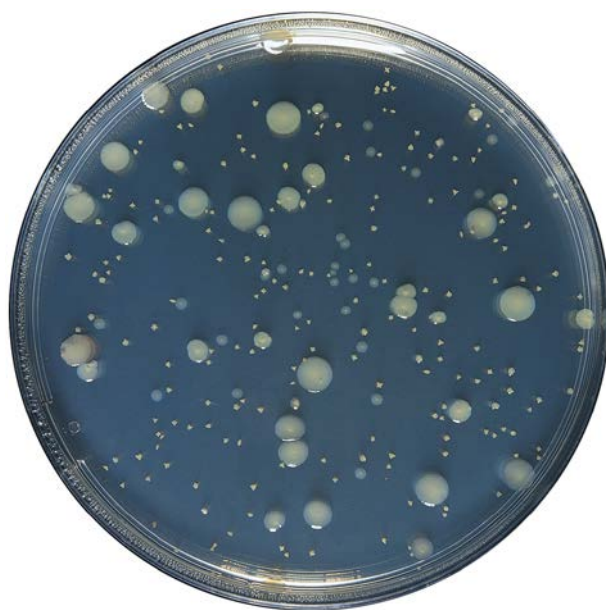
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### Yeast Extract Agar

Enumeration of culturable microorganisms in water.

#### Results :

Growth obtained after 44 hours of incubation at 36 °C.



Characteristics : excellent growth of aerobic mesophilic bacteria