TECHNICAL DATA SHEET

SYMPHONY AGAR

ENUMERATION OF YEASTS & MOLDS

1 INTENDED USE

Symphony agar allows the enumeration of yeasts and molds in all human and animal food products regardless of their water activity. It can also be used for the control of environmental samples in production areas. In the case of water samples, they can be analyzed by membrane filtration using this media.

The SYMPHONY agar method is certified NF VALIDATION, according to the validation protocol ISO 16140-2:2016, for all food and feed products.

This method allows the enumeration after only 54 hours of incubation, compared to a minimum of 5 days for standard methods.

BKR 23/11-12/18,
ALTERNATIVE ANALYSIS METHOD
FOR AGRIBUSINESS
Certified by AFNOR Certification **nf-validation.afnor.org/en**

Refer to the certificate available on the NF VALIDATION website for the end of validity date of the method.
The reference methods used for the validation are NF ISO 21527-1 and NF ISO 21527-2.

2 PRINCIPLES

The choice of peptones, carbohydrates and growth promotors were specially selected in order to optimize the rapid growth of yeasts & molds.
Rose Bengal is assimilated by yeasts which facilitate their enumeration by coloring them pink.
The selective system, associated with the pH of the media, insures the inhibition of the majority of bacterial contaminants.
The media has been conceived in a way that reduces the propagation of Mucor thallus, which facilitates their count after only 54 hours of incubation. It is also well adapted to the enumeration of mold spores.

3 TYPICAL COMPOSITION

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

For 1 liter of medium :

- Peptones ..... 10,0 g
- Glucose ..... 18,0 g
- Growth promotors ..... 1,0 g
- Selective system ..... 1,0 g
- Bacteriological agar..... 15,5 g

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

4 PREPARATION

Preparation of dehydrated medium :

- Suspend 45.5 g of dehydrated medium (BK227) in 1 L of distilled or deionized water.
- Slowly bring to boiling, stirring with constant agitation until complete dissolution.
- Dispense in flasks.
- Sterilize in an autoclave at 121 °C for 15 minutes.
- Cool and maintain at 44-47°C.

✓ **Reconstitution :**
45.5 g/L

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

NOTE : Avoid excessive heating of medium, which will produce a denaturation of agar due to an acidification of pH and a very soft agar medium.

Use of ready-to-melt base medium :

- Melt the ready-to-melt medium (BM191) for the least amount of time needed to achieve total liquefaction.
- Cool and maintain the medium in a molten state at 44-47 °C.

5 INSTRUCTIONS FOR USE

Respect the good laboratory practices.
Refer to the NF EN ISO 7218 standard for plating, colony counting and for calculations and expression of results.
Prepare the initial suspension of the sample and the decimal dilutions according to the rules defined in the corresponding ISO 6887 standards.

Surface inoculation

- Pour into sterile Petri plates.
- Let solidify on a cold, flat surface.
- Dry the plates in an incubator, covers partially removed.
- Transfer 0,1 mL of the sample to be tested and its serial dilutions to the surface of the prepared plates.
- To estimate low numbers, inoculate 1 mL of initial suspension on to the surface of 3 Petri dishes (Ø 90 mm).
- Spread the inoculum over the surface of the plate with a sterile triangle or “hockey stick”.
- Incubate the plates with the cover facing up at 25 °C for 54 to 72 hours.

✓ **Inoculation :**
0,1 mL on the surface

✓ **Incubation :**
54 to 72 h at 25 °C

Pour plate inoculation

- Transfer 1 mL of the sample suspension and its serial dilution to empty, sterile Petri plates.
- Pour in approximately 15 mL of molten media, per plate.
- Homogenize well by swirling and let solidify on a cold, flat surface.
- Incubate the plates with the covers facing up at 25 °C for 54 to 72 hours.

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

✓ **Incubation :**
54 to 72 h at 25 °C

NOTES :

- The method of surface inoculation can result in superior counts over the pour plate method. Surface inoculation facilitates the maximum exposure of the cells to atmospheric oxygen and avoids thermal inactivation of fungal propagules.

- Not certified by NF VALIDATION, the SYMPHONY medium can be used for passive (sedimentation) or active (biocollector) air monitoring. It can also be used for water monitoring by depositing the membranes on the surface of the agar.

6 RESULTS

Count only plates containing less than 150 colonies.

7 QUALITY CONTROL

Dehydrated medium : cream powder, free-flowing and homogeneous.
Prepared medium : limpid, violet agar.

Typical culture response after 3 days of incubation at 25 °C :

Microorganisms		Growth (Productivity ratio : P_R)
Saccharomyces cerevisiae	WDCM 00058	$P_R \geq 50$ %
Candida albicans	WDCM 00054	$P_R \geq 50$ %
Aspergillus brasiliensis	WDCM 00053	$P_R \geq 50$ %
Escherichia coli	WDCM 00013	Inhibited, score 0
Bacillus subtilis ssp. *spizizenii*	WDCM 00003	Inhibited, score 0

8 STORAGE / SHELF LIFE

Dehydrated medium : 2-30 °C
Ready-to-melt medium : 2-8 °C.
Pre-poured medium : 2-8 °C. The closed boxes can be stored for up to 30 days at 25°C.
The expiration date are indicated on the labels.

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

9 PACKAGING

Dehydrated medium :
500 g vial..... BK227HA

Ready-to-melt media :
10 x 200 mL vials..... BM19108

Pre-poured media :
20 plates (Ø 90 mm) BM20208

10 BIBLIOGRAPHY

NF ISO 21527-1. November 2008. Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of yeasts and moulds - Part 1 : colony count technique in products with water activity greater than 0,95.

NF ISO 21527-2. November 2008. Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of yeasts and moulds - Part 2 : colony count technique in products with water activity less than or equal to 0,95.

NF V08-059. November 2002. Microbiology of food animal feeding stuffs - Enumeration of yeasts and moulds by colony-count technique at 25 °C - Routine method.

NF V 08-036. May 2003. Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of yeasts and moulds growing on low aw medium.

ISO 6611. 2004. IDF 94:2004. Milk and milk products - Enumeration of colony-forming units of yeasts and/or moulds - Colony-count technique at 25 °C.

NF EN ISO 7218. October 2007. Microbiology of food and animal feeding stuffs - General requirements and guidance for microbiological examinations.

NF EN ISO 16140-2. September 2016. Microbiology of the food chain - Method validation - Part 2 : protocol for the validation of alternative (proprietary) methods against a reference method.

11 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.

Document code	:	SYMPHONY_EN_V6 (en).
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ANNEX 1 : PHOTO SUPPORT

SYMPHONY Agar

Enumeration of yeasts and molds