

### PRODUCT DESCRIPTION SHEET

Code 5102	File name PDS5102	Analyst Ms. Shah	Version 03	Date 02/02/2022
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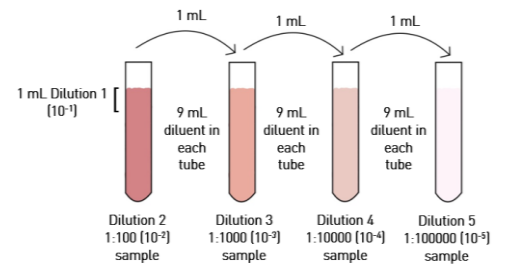
#### DESCRIPTION

R<sub>5</sub><sup>TM</sup> YM are rapid testing film plates to accurately determine Yeast and Molds (YM) in food and beverages. The plates are ready-to-use and provide YM results within 48-72 hours. It contains a pre-prepared culture medium, a water-absorbing gel. Through the amplification of an enzyme color reagent, counting of YM colonies are facilitated.

- If furthermore dilutions are required, follow the same procedure.
- For accurate results, is necessary to follow each dilution and step.

#### KEY BENEFITS

- Antifungal effect validator
- Accurate detection of YM in food and beverage
- Quick and easy usage
- Low cost-in-use



#### INTENDED USE

R<sub>5</sub><sup>TM</sup>AC film plates are intended:

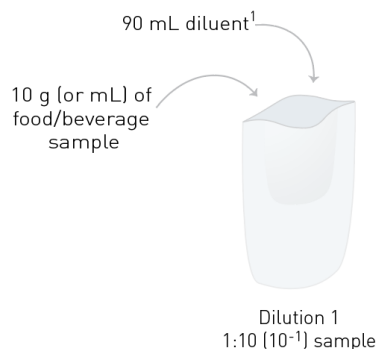
- To assess yeast and mold counts in food and beverages.
- To validate the efficiency of Handary Antifungal products.

#### DIRECTION FOR USE

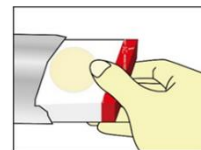
##### 1. Food sample & dilutions preparation

- Weigh 10 g (or mL) of food/beverage sample in a sterile container (bag/flask) and mix it with 90ml of diluent<sup>1</sup>, as shown in the figure below (Dilution 1).  
<sup>1</sup>Sterile distilled water.
- Homogenise the diluted sample for 30 seconds.
- If high counts of YM are expected ( $\geq 10^3$  CFU/g (or ml)), further dilutions of sample are required as described below.

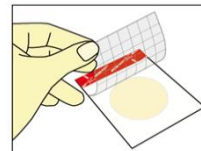
##### Sample Dilutions Preparation



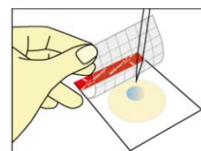
##### 2. Plating the diluted food sample



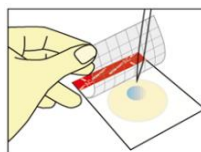
Open the R<sub>5</sub><sup>TM</sup> YM Testing kit, take out one plate and place it on a clean and flat surface.



Open the upper film of the plate with clean hands as shown in figure.



Collect 1 ml of the homogenized diluted sample by using a sterile pipette and evenly spread it on the centre of the plate.



Slowly place back the upper film on the plate without applying any pressure on it and let the plate stand for one minute.

##### 3. Incubation

- Stack the prepared plates facing upward for 48-72 hours  $\pm$  2h at 28°C  $\pm$  1h.
- No more than 12 pieces shall overlap each other.
- Prepare the next sample dilution (Dilution 2) by mixing 1 mL from the first dilution bag with 9 mL of diluent<sup>1</sup> in a sterile test tube/ container.

HANDARY SA  
Rue Colonel Bourg 127  
1140 Brussels, Belgium

T +32 23 74 63 14  
E info@handary.com  
www.handary.com  
No. BE 0817 450 771

The information contained in this file is based on our own testing analysis and is, to the best of our knowledge, reliable. Users should, however, conduct their own test to determine the suitability of our products for their own specific purposes.



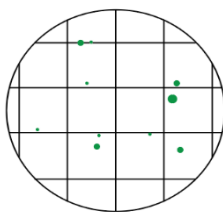
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#### 4. Results and Interpretation

- Each green spot appearing on the plate after the complete incubation time represents a yeast or molds colony.



10 cfu/mL

Number of colonies on plate (N) = 10 CFU

- To calculate the final YM CFU/mL for each plate, follow the equation:

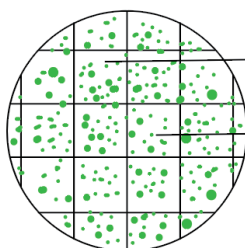
$$YM \text{ (CFU / g (or mL))} = N \times \frac{1}{\text{Dilution}}$$

- Therefore, for N = 10 CFU,

$$YM \text{ (CFU / g (or mL))} = 10 \times \frac{1}{\text{Dilution}}$$

$$YM = 10 \times 10 = 100 \text{ CFU / g (or mL)} \\ = 1 \times 10^2 \text{ CFU / g (or mL)}$$

- Count each of the green spots present on the plate.
- Count is possible up to 150 colonies/plate.
- If the plate has too many colonies that impairs the counting, please select several representative small squares to count the average number of bacteria colonies and multiply the average by 20 to get the total count.
- Figure below displays an example of full colonies plate:

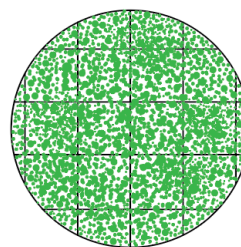


Avg. = 16.5

$$N = \text{Avg.} \times 20 = 16.5 \times 20 = 330 \text{ CFU}$$

$$YM \text{ (CFU / g (or mL))} = 330 \times \frac{1}{\text{Dilution 1}} \\ YM = 330 \times 10 = 3300 \text{ CFU / g (or mL)} \\ = 3.3 \times 10^2 \text{ CFU / g (or mL)}$$

- Follow the same calculations for your plate.
- If the green spot colonies appearing on the plate are uncountable, further sample dilutions are required.
- Figure below displayed an example of uncountable plate:



Uncountable plate, further dilutions required.

- YM counts ranging from 10<sup>1</sup> to 10<sup>3</sup> CFU/g (or ml) usually represent an acceptable level of contamination.
- YM count reaching ≥ 10<sup>5</sup> CFU/g (or ml) is usually an indicative of food/beverage spoilage.
- At these concentrations, quality food defects such as turbidity, swelling, slime formation, discoloration and off-flavors is initially perceived.
- The YM threshold level of spoilage may vary according to the type of food/beverage.
- Spoilage by molds (even at low counts, such as 10 CFU/g(or ml) may occur due to the appearance of visible mycelia at the food/beverage surface.
- To validate the antifungal efficiency of Handary products, it is recommended to repeat the same procedure and compare the results to attain efficacy.

#### STORAGE

Store unopened product at 2-8°C in dry conditions, away from light. In high humidity environments, please restore the test piece to room temperature before use. After opening and unsealing, it is necessary to fold the package bag twice then stick it with adhesive tape or seal it with a sealing clip. Use it within one month.

#### SHELF LIFE

12 months

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