

Petrifilm™ Yeast & Mould Count Plates



“a world of learning”

Description

The Petrifilm Yeast and Mould count plate from 3M is a ready-made medium system for the enumeration of yeasts and moulds commonly found in foods, on work surfaces and in the atmosphere. Petrifilm Yeast and Mould plates contain modified Sabroud's nutrients, two broad spectrum antibiotics to suppress bacterial growth, a cold water gelling agent, and a dye to enhance the visualisation of growth on the plate (colours all yeasts aqua green).

Directions For Use

1. Place the Petrifilm Yeast and Mould plate on a flat surface (see fig 1).
2. Lift the top film, hold the pipette perpendicular to the plate and carefully dispense 1mL of sample or sterile hydrating solution onto the centre of the bottom film (see fig 2). Sterile hydrating solution is used when you intend to test a surface or expose the plate to the air.
3. Release the top film and allow it to cover the liquid (see fig 3).
4. Lift the plastic spreader using the handle. Align the centre of the spreader with the approximate centre of the plate. Distribute the sample evenly by using a gentle downward pressure on the centre of the spreader (see fig 4). Avoid sliding the spreader across the film. Remove the spreader and leave the plate undisturbed for one minute to allow the gel to solidify.
5. Plates treated with sterile hydrating solution should be allowed to gel for at least one hour, but may be stored in a refrigerator for up to 2 weeks before being used to test a surface or air sample.
6. Incubate inoculated plates in a horizontal position (clear side up) at 20-25°C. Plates may be stacked up to 20 high and placed in a press-seal bag (see fig 5). Observe plates for growth at both 3 days and 5 days.

Interpretation

1. Yeast colonies will be blue-green or off-white in colour and will form small defined colonies.
2. Mould colonies tend to be larger and more diffuse than the yeast colonies, and they may assume their natural pigmentation (e.g. black, yellow, green).
3. Express the count in terms of the number of colony forming units (cfu) per sample.
4. High numbers may cause the entire growth area to be coloured. If this occurs, further dilution of the sample is required to obtain an accurate count.

Storage

Store unopened packs of Petrifilm Yeast and Mould plates in a freezer. Allow the pack to come to room temperature before opening. After opening and removing the plates you need, the pack may be resealed with tape and/or placed in a press-seal bag and returned immediately to the freezer.

After removal from the pack, plates should be kept in cool dry conditions (below 25°C and 50%RH) and used within one month.



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5

Petrifilm™ Yeast & Mould Count Plates

Suggested Experiments

1. Yeasts and moulds in the air

Decide how many plates you would like to expose. For example, you might like to compare the results from different rooms or air conditioner outlets, and you might like to take more than one sample at each location. Allow an extra plate to serve as an unexposed control. Discuss the reasons for using a control with your students.

Hydrate the plates using sterile diluent and a sterile pipette and allow them to gel. This should be done at least one hour before use, but may be done up to two weeks in advance.

Peel back the top film without touching the hydrated culture medium and expose the plate to the air for precisely 5 minutes. This is easier if you use a plate clip and a small piece of double sided tape (see fig 6).

Carefully allow the top film to return to its original position then incubate at 20-25°C. Observe plates for growth at both 3 days and 5 days. The Petrifilm Yeast and Mould plates have an area of 30cm², however, since both the top and bottom surfaces were exposed, the total area available is 60cm². Express the final result as the number of colony forming units per square centimetre per minute (cfu.cm⁻².min⁻¹). This allows comparisons between different samples to be made.

If the count is too high to give a reliable figure, repeat the test with a shorter exposure period.



Figure 6

2. Yeasts and moulds on surfaces

Prepare for this experiment by deciding how many plates you will need and hydrating them as described above. Almost any even surface can be considered for testing, including bench tops, floors, walls, skin and even hair. Once again, allow an extra plate to serve as an unexposed control.

Peel back the top film and gently press its underside evenly across the surface to be tested (see fig 7), then lift it away and allow the top film to return to its normal position. Incubate at 20-25°C and observe the plates for growth at both 3 days and 5 days. This time, express the result as the number of colony forming units per square centimetre (cfu.cm⁻²).

Check the effectiveness of cleaning by repeating the test after thoroughly treating the sample area with a sanitiser. To go further, set up adjacent areas and try different cleaning agents to compare how well they work.

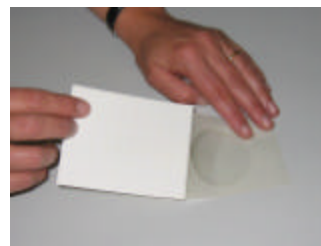


Figure 7

Safety and Disposal

Following inoculation, plates presented to the class for examination and counting should be taped shut or placed in a press-seal bag to keep them isolated. Follow good laboratory practice and have students thoroughly wash their hands after handling microbiological samples and equipment. Adequate antibacterial hand wash and hand rub sanitiser solutions should be provided.

Plates with viable colonies must be disposed of in a responsible way such as by autoclaving or soaking in an appropriate disinfectant. Alternatively, you can use a contract collection service such as that provided by Stericorp.

More Information

To receive a full colour "pdf" version of these notes, please email a request to sales@southernbiological.com.

For further information about Yeast and Mould count plates and other Petrifilm products, please visit the "Catalogue" section of our web site. You'll find more suggestions for student experiments as well as further details on sample preparation, usage techniques and interpretation of results.

To attend a participative hands-on workshop on how to successfully introduce Petrifilm to your school science curriculum, consult the "Events" section of our web site to check times and locations.

In addition, we would welcome a call to our office if you have any remaining questions relating to Petrifilm and its uses.

Acknowledgement

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