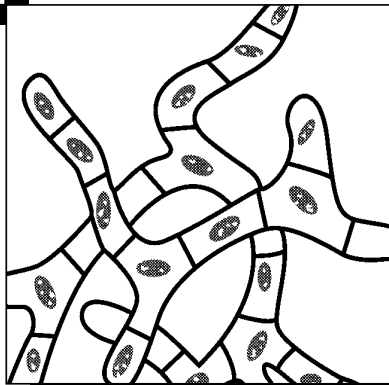
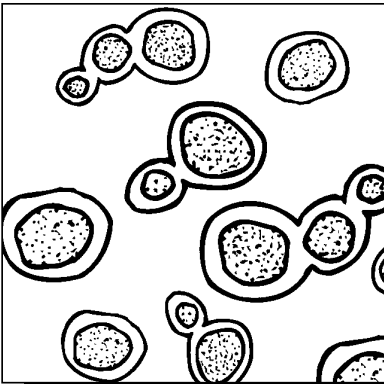


82-4010

3M[™] Petrifilm[™] Yeast and Mold Count Plates

Instruction Manual



Description

The 3M™ Petrifilm™ Yeast and Mold Count (YM) Plate is a ready-made culture medium system that contains nutrients supplemented with antibiotics, a cold-water-soluble gelling agent, and an indicator dye that makes colonies easier to see. Petrifilm plates are manufactured with a grid background to facilitate counting colonies. Petrifilm YM plates can be used in place of standard fungal nutrient media such as Potato Dextrose Agar in many applications, as described below:

- Petrifilm plates can be hydrated with a culture or a dilution of a culture for counting the viable organisms present. See Method A.
- Petrifilm plates can be hydrated first with water or buffer, then inoculated by swabbing, streaking, or touching to surfaces. See Method B.
- Cells can be removed from colonies growing on Petrifilm plates and used to inoculate additional cultures or for staining.
- Experimental results on Petrifilm plates can be converted into electronic files by scanning the plates on a standard computer-linked scanner. Do not open plates to scan them.

Petrifilm plates were developed for use in the food and beverage industry. They have been certified for official analyses in many countries. For more information about these applications, see the 3M page on the World Wide Web at www.3m.com.

Storage

Refrigerate unopened packages at $\leq 8^{\circ}\text{C}$ ($\leq 46^{\circ}\text{F}$). Use before expiration date on package.

To seal an opened package, fold the end over and tape it shut (fig. 1). Keep resealed packages at room temperature and less than 50% relative humidity.

Do not refrigerate opened packages. Use plates from the opened package within one month after opening.



Figure 1

Safety

Petrifilm YM plates contain the antibiotics chloramphenicol and tetracycline to prevent bacterial growth. **The hydrated medium should not come into contact with skin. Do not inoculate Petrifilm YM plates by touching them.**

After use, Petrifilm YM plate will contain viable yeast and mold colonies. Opening a used YM plate risks spreading spores. If allowed to sit for several days, molds can grow out of the plates and spread spores. For these reasons, it is recommended that Petrifilm YM plates be taped shut after inoculation, and disposed of within a week of inoculation.

Use sterile technique when handling Petrifilm plates. Disinfect work area before and after use, and wash hands before leaving the laboratory.

Directions for Use

Method A. Inoculation with liquid sample

Inoculate and spread each Petrifilm plate before going on to the next plate.

1. If a Petrifilm plate pack has been stored in the refrigerator, let the package come to room temperature before opening it. This step prevents condensation from forming inside the package.
2. Place the Petrifilm plate on a level surface, with the gridded side down. Lift the top film (fig. 2).

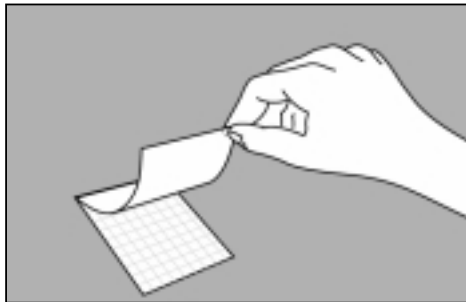


Figure 2

3. With pipet perpendicular to the Petrifilm plate, place 1 mL of sample onto the center of the bottom film (fig. 3). If necessary, samples can be diluted with distilled water, liquid culture medium, or buffer. If antibiotics are to be added to the medium, add them to the inoculating liquid at the working concentration.

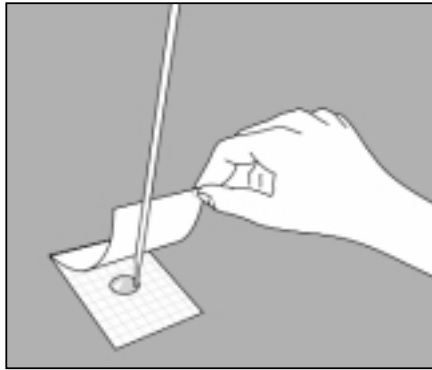


Figure 3

4. Release the top film. Allow it to **drop** onto the bottom film. Do not roll the top film down (fig. 4).

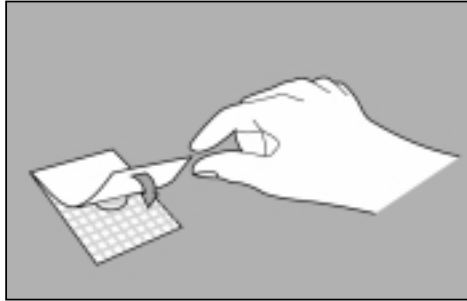


Figure 4

5. Holding the YM spreader by the handle, place the spreader on the top film over the inoculum (fig. 5).



Figure 5

- 6. Gently** apply pressure on the spreader to distribute the inoculum over a circular area. Do not twist or slide the spreader (fig. 6).

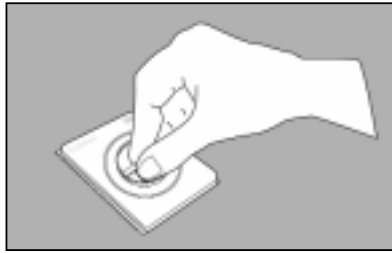


Figure 6

7. Lift the spreader. Wait at least 1 minute for the gel to solidify (fig. 7).

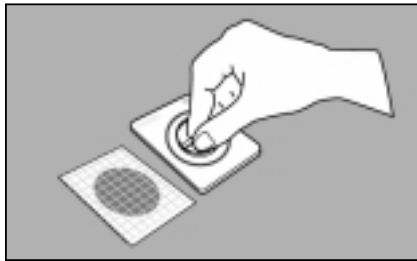


Figure 7

8. Incubate plates with the clear side up in stacks of up to 20 plates. Incubation time and temperature will vary according to the application and equipment available.
9. Colonies on Petrifilm plates can be counted on a standard colony counter or other light source (fig. 8). Yeast colonies will be small with defined edges, and will be pink-tan to blue-green because of the indicator dye in the medium. Mold colonies will be large, diffuse, and variable in color.

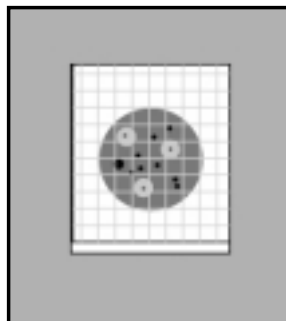


Figure 8

10. Disinfect before disposal. To disinfect, fill a dishpan with 10–20% bleach and put on a pair of latex or other protective gloves. Immerse the taped Petrifilm plates in the solution, then open them. This procedure ensures that the organisms will be exposed to bleach, but minimizes the risk of spreading spores. Soak the plates in the bleach solution for at least 1 hour. Then, they can be placed in the trash. Alternatively, they can be taken to a facility such as a hospital or given to a school nurse for disposal with other biohazardous material.

Method B. Hydrating and using as solid medium

Hydrate and spread each Petrifilm plate before going on to the next plate.

1. Follow steps 1–6 of Method A to hydrate the Petrifilm. Use distilled water, broth, or a buffer. If additional antibiotics are to be added to the medium, add them to the hydration liquid at the working concentration.
2. Lift the spreader (fig. 7). Wait at least 2 hours for the gel to solidify.
3. Hydrated Petrifilm plates can be stored in a sealed bag in the refrigerator for up to 7 days before use.
4. To inoculate the medium, lift the top film. The circular gel area will adhere to the top film (fig. 9).

Examples of uses include:

- Streak for isolated colonies with a sterile loop, more gently and with less pressure than you would a standard plate. Tape the Petrifilm plate to a flat surface in the open position for streaking.
- Touch the circular gel area to a surface of interest. This could be a bench top, finger, doorknob, or other smooth object.
- Sample the air by peeling back the top film with the circular gel area and taping the open Petrifilm plate to a vertical surface so that the gel area is exposed. After exposure time has elapsed, take down the Petrifilm plate, close it, and incubate.

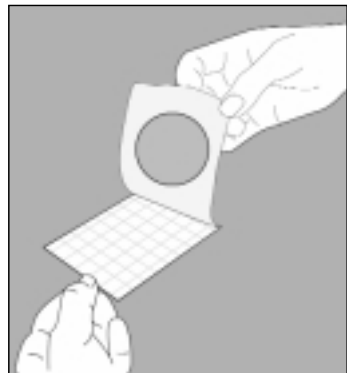


Figure 9

Yeast colonies will be small with defined edges and will be pink-tan to blue-green in color. Mold colonies will be large, diffuse, and variable in color.

Microscopic Differentiation

To examine the organisms, lift the top film and pick the colony from the gel (fig. 10). Transfer the colony to a drop of water on a microscope slide, cover with a coverslip, and view under oil immersion (fig. 11). Look for oval-shaped budding yeast (fig. 12) and for mold—both its branching mycelium (fig. 13) and its germinating spores (fig. 14).

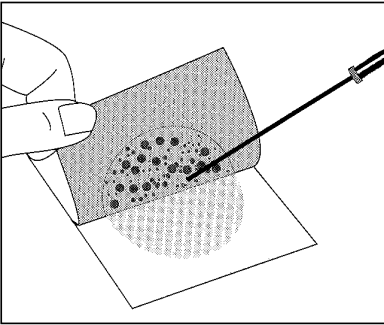


Figure 10

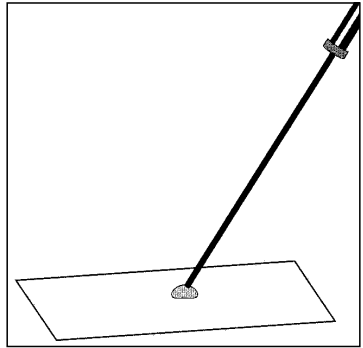


Figure 11

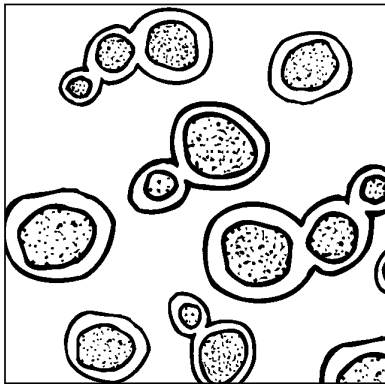


Figure 12

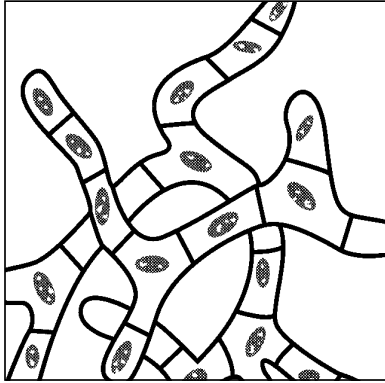


Figure 13

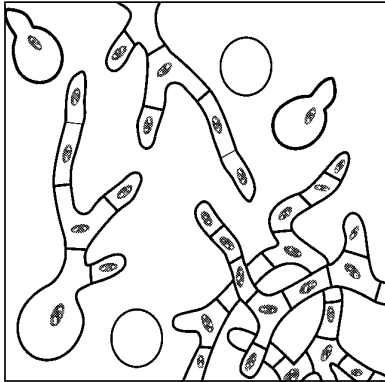


Figure 14

To order call:

1-800-334-5551 (US and Canada)

336-584-0381 (International)

For technical help call:

1-800-227-1150

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Carolina Biological Supply Company

2700 York Road, Burlington, North Carolina 27215

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