The 3M™ Petrifilm™ Rapid Aerobic Count Plate is a sample-ready culture medium system that contains nutrients, a cold-water-soluble gelling agent and a dual-sensing indicator technology that facilitates aerobic bacteria enumeration as quickly as 24 hours for most food matrices.
**Aerobic bacteria count = 88**
Blue and red indicator dyes in the plate colour the colonies. Count all colonies regardless of their size or colour intensity.

**Aerobic bacteria count = 204**

**Aerobic bacteria count = 0**
Figure 3 shows a 3M™ Petrifilm™ Rapid Aerobic Count Plate without colonies.

**Aerobic bacteria count = 49**
Figure 4 shows a 3M™ Petrifilm™ Rapid Aerobic Count Plate with a few bacterial colonies.
**Normal lighting**

The counting range on a 3M™ Petrifilm™ Rapid Aerobic Count Plate is less than or equal to 300 colonies.

*For a more accurate count, further dilution of sample may be necessary.*

**Backlighting**

The circular growth area is approximately 30 cm². Gridlines are visible with the use of a backlight to assist with estimated enumeration. Estimates can be made on 3M™ Petrifilm™ Rapid Aerobic Count Plates by counting the number of colonies in two or more representative squares and determining the average number per square. Multiply the average number by 30 to determine the estimated count per plate.

*For a more accurate count, further dilution of sample may be necessary.*

**Aerobic bacteria count = TNTC**

High concentrations of colonies on the 3M™ Petrifilm™ Rapid Aerobic Count Plates will cause the entire growth area to become blue or red. Occasionally, on overcrowded 3M™ Petrifilm™ Rapid Aerobic Count Plates, the centre may lack visible colonies, but many small colonies can be seen on the edges. When any of these occurs, record results as too numerous to count (TNTC).

*For a more accurate count, further dilution of sample may be necessary.*
Aerobic bacteria count = 80
Colonies may spread, creating a halo. These colonies should be counted by counting each foci or point in a spread zone. A single colony can be seen in Circle 1; two colonies are present in Circle 2.

Excessive spreader growth
If the growth of spreading colonies exceeds 25% of the area of the plate, an estimate can be made or read the next dilution.

Enzymatic Reaction
Food samples may occasionally show interference on the 3M™ Petrifilm™ Rapid Aerobic Count Plates, for example, (a) a uniform light blue background colour (often seen from the organisms used in cultured products) should not be counted as TNTC; (b) intense, pinpoint blue specs (often seen with spices or granulated products) should not be counted as colonies.

Aerobic bacteria count = 0
No enzymatic reaction present.

Aerobic bacteria count = 110
A uniform blue background with countable colonies.
Aerobic bacteria count = 136
Colonies along the edges of the plate may appear in lines or streaks. These should be counted as a single colony.

Food particles may produce blue specs (circled) and should not be counted as colonies.

Reminders For Use

Storage

1. Store the unopened 3M™ Petrifilm™ Rapid Aerobic Count Plate pouches at frozen or refrigerated temperatures between -20 and 8°C (-4 to 46°F). Use before expiration date on package. It is best to allow pouches to reach room temperature before opening.

2. Seal by folding the end of the pouch over and applying adhesive tape. To prevent exposure to moisture, do not refrigerate opened pouches. Store resealed pouches in a cool, dry place (20–25°C/≤60% RH) for no longer than four weeks.

Inoculation

3. Place the 3M™ Petrifilm™ Rapid Aerobic Count Plate on level surface. Lift the top film. With 3M™ Electronic Pipettor or equivalent held perpendicular to plate, place 1 mL of sample or diluted sample onto centre of bottom film.

4. Roll top film down onto sample gently to prevent pushing sample off film and to avoid entrapping air bubbles. Do not let top film drop.

5. Place the 3M™ Petrifilm™ Flat Spreader (8425) or other flat spreader on the centre of the 3M™ Petrifilm™ Rapid Aerobic Count Plate.

6. Gently apply pressure on spreader to distribute inoculum over circular area. Do not twist or slide the spreader.

7. Lift spreader. Wait a minimum of one minute for gel to solidify.
Rapid Aerobic Count Plate

Incubation

Incubate plates with clear sides up in stacks up to 40. When following standard methods for the examination of dairy products, plates should be incubated in stacks up to 20. It may be necessary to humidify incubator to minimize moisture loss. Please refer to the product instructions for third-party-validated methods.

Interpretation

3M™ Petrifilm™ Rapid Aerobic Count Plate can be counted with the 3M™ Petrifilm™ Plate Reader, on a standard colony counter or other magnified source.

Use Appropriate Sterile Diluents

These include Butterfield’s phosphate buffer, buffered peptone water, 0.1% peptone water, peptone salt diluent, saline solution (0.85–0.90%), bisulphite-free letheen broth or distilled water.

Do not use diluents containing citrate, bisulphite or thiosulfate with 3M™ Petrifilm™ Rapid Aerobic Count Plates; they can inhibit growth.

If citrate buffer is indicated in the standard procedure, substitute with one of the buffers listed above, warmed to 40–45°C.

If needed, adjust the pH of the sample suspension to a pH greater than pH 5.

3M Food Safety offers a full line of products to accomplish a variety of your microbial testing needs. For more product information, visit us at 3M.ca/Foodsafety/Petrifilm or call 1-800-328-6553.