



Petrifilm®

Interpretation Guide

The Neogen® Petrifilm® Rapid Aerobic Count Plate is a sample-ready culture medium system which contains nutrients, a cold-water-soluble gelling agent and a dual-sensing indicator technology that facilitates aerobic bacteria enumeration as soon as 24 hours for most food matrices.



RAC

Rapid Aerobic Count Plate



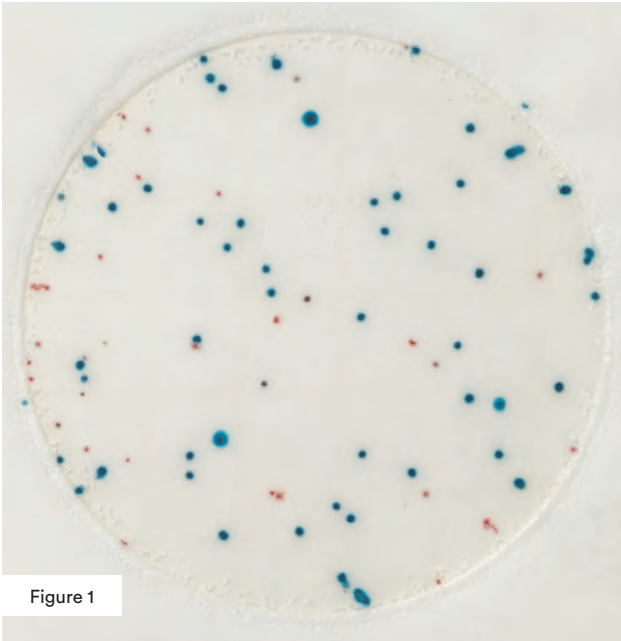


Figure 1

Aerobic bacteria count = 88

Blue and red indicator dyes in the plate color the colonies. Count all colonies regardless of their size or color intensity.

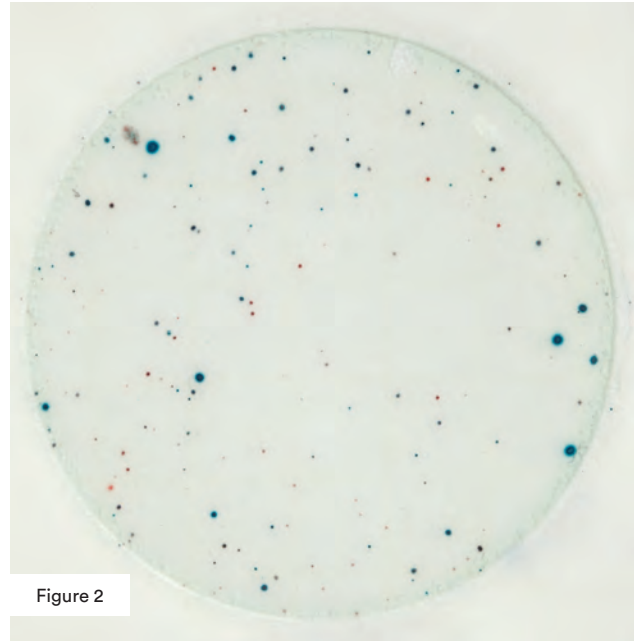


Figure 2

Aerobic bacteria count = 204



Figure 3

Aerobic bacteria count = 0

Figure 3 shows a Petrifilm Rapid Aerobic Count Plate without colonies.

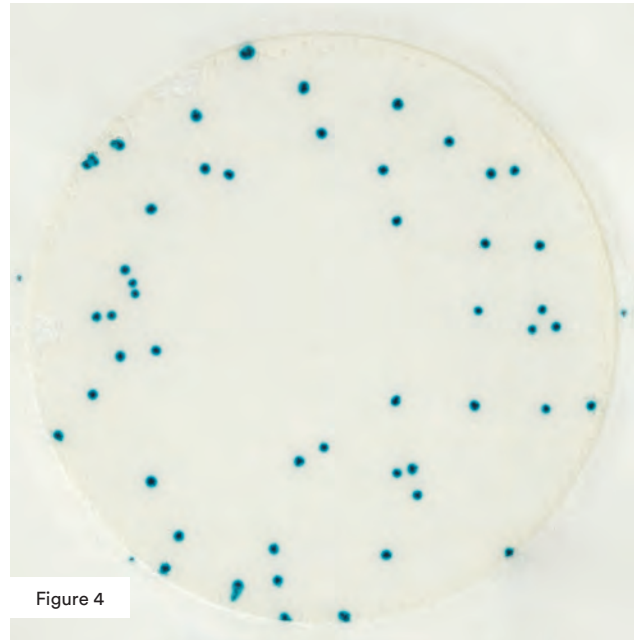


Figure 4

Aerobic bacteria count = 49

Figure 4 shows a Petrifilm Rapid Aerobic Count Plate with a few bacterial colonies.

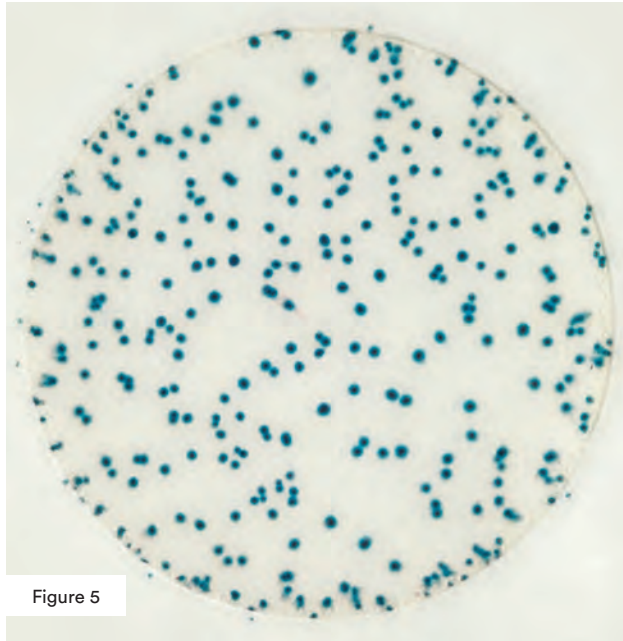


Figure 5

Normal lighting

The counting range on a 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.

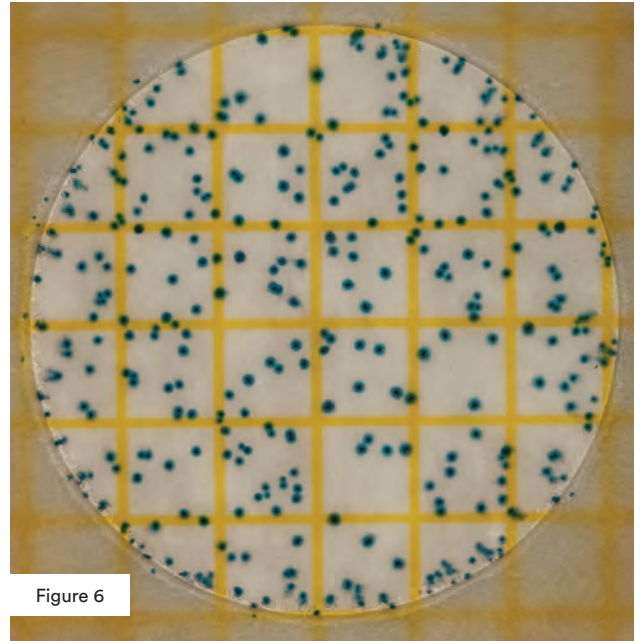


Figure 6

Backlighting

The circular growth area is approximately 30cm². Gridlines are visible with the use of a backlight to assist with estimated enumeration. Estimates can be made on 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.

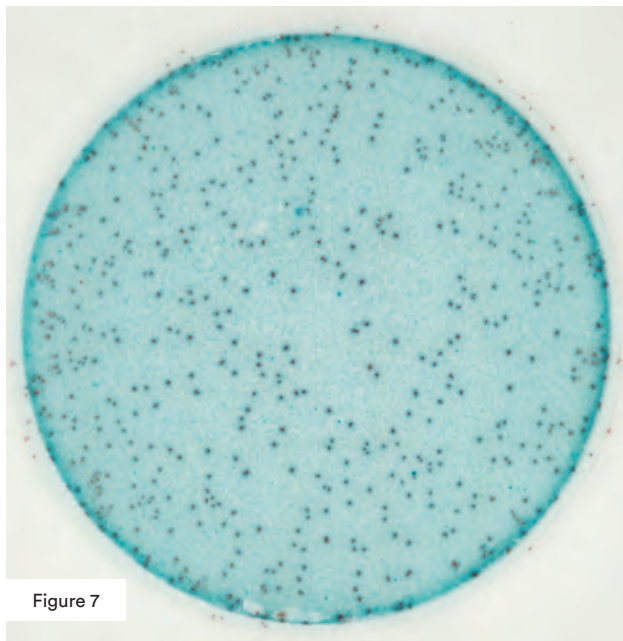


Figure 7

Aerobic bacteria count = TNTC

High concentrations of colonies on the Petrifilm Rapid Aerobic Count Plates will cause the entire growth area to become blue or red. Occasionally, on overcrowded Petrifilm Rapid Aerobic Count Plates, the center 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.

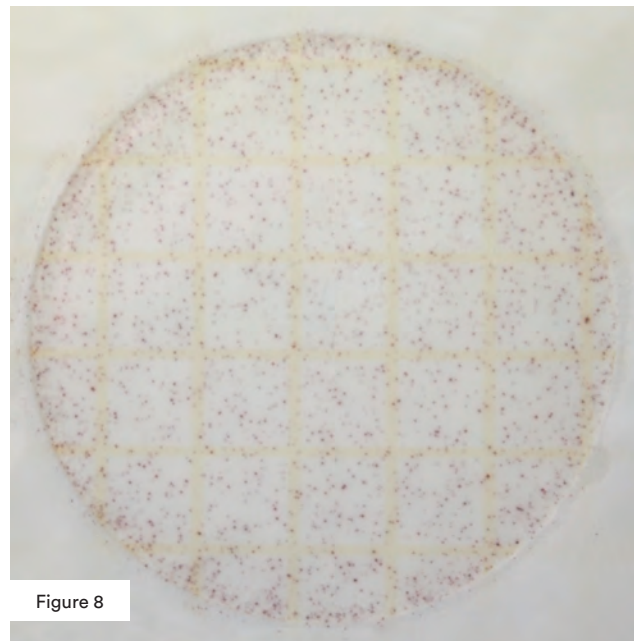


Figure 8

Aerobic bacteria count = TNTC

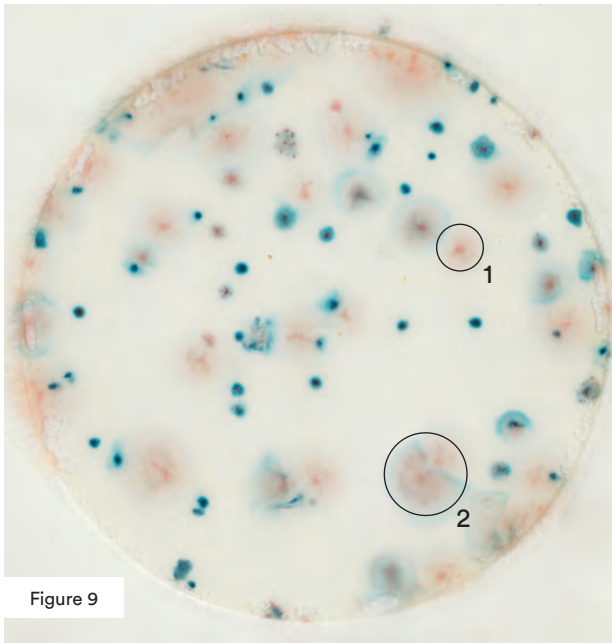


Figure 9

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.

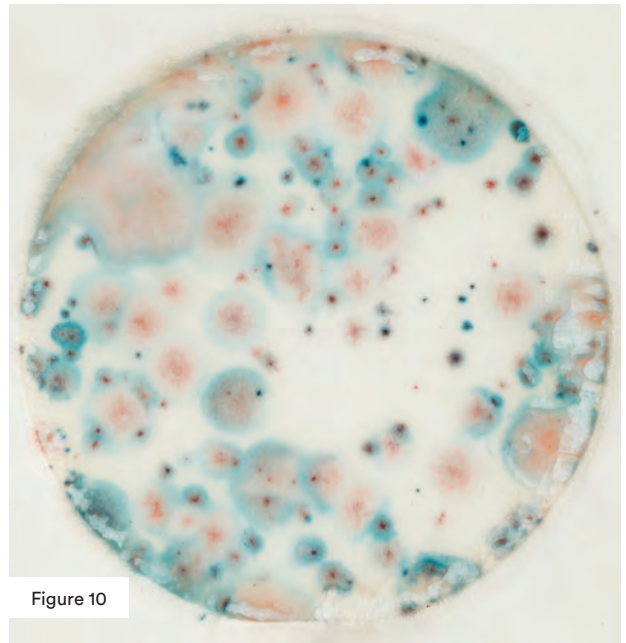


Figure 10

Excessive spreader growth

If the growth of spreading colonies exceeds greater than 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 Petrifilm Rapid Aerobic Count Plates, for example: (a) A uniform light blue background color (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.

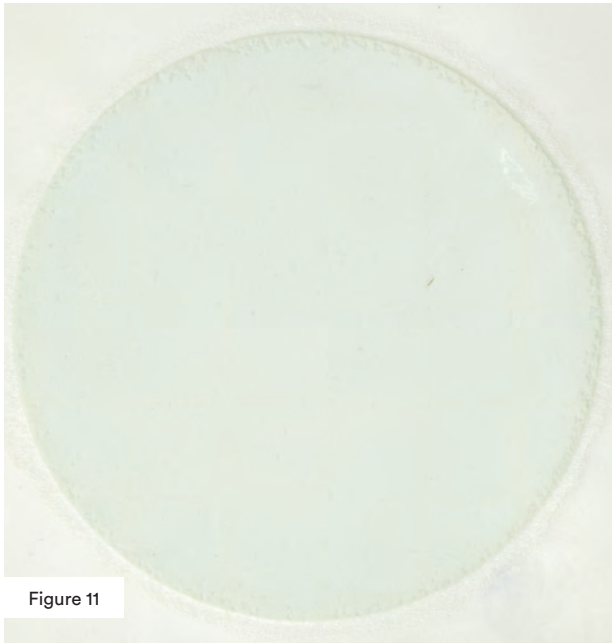


Figure 11

Aerobic bacteria count = 0

No enzymatic reaction present.

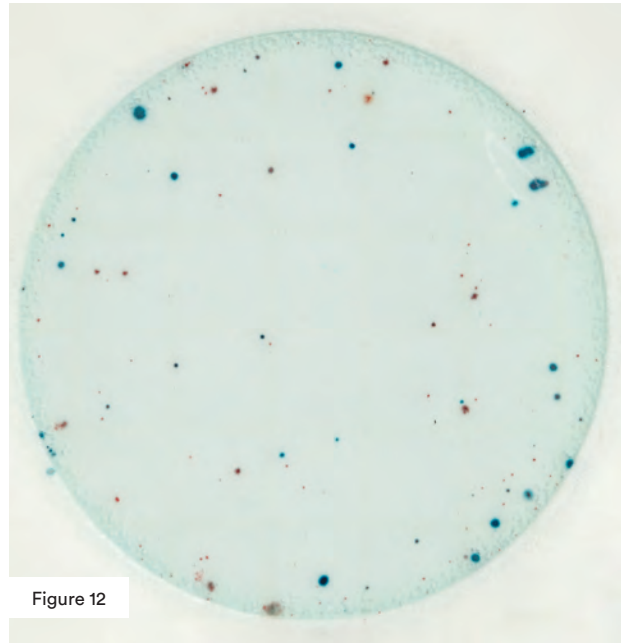


Figure 12

Aerobic bacteria count = 110

A uniform blue background with countable colonies.

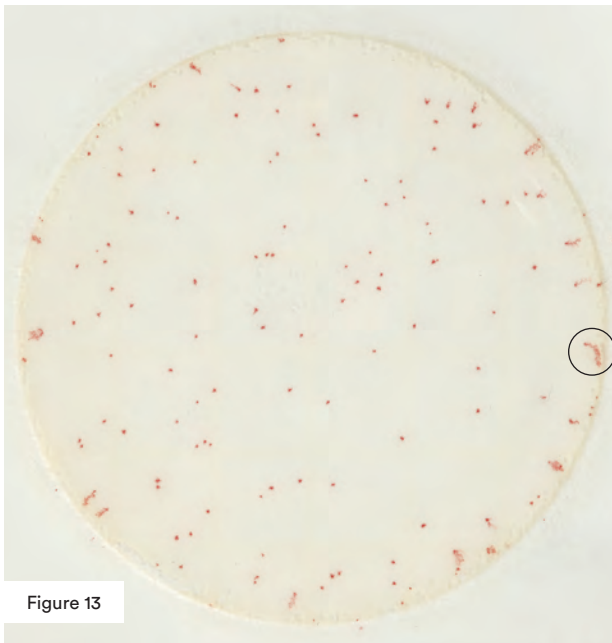


Figure 13

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.

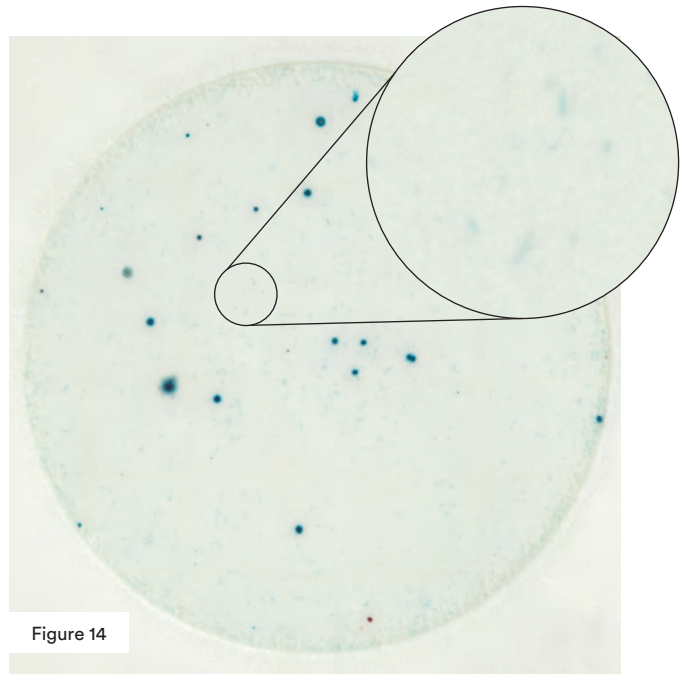
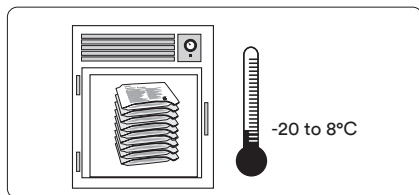


Figure 14

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

Reminders For Use

Storage



01

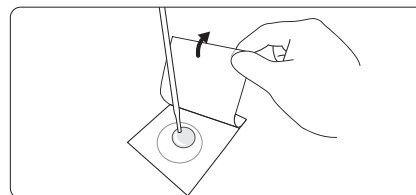
Store the **unopened** Petrifilm Rapid Aerobic Count Plate pouches at frozen or refrigerated temperature equal to -20 to 8°C (-4 to 46°F). Use before expiration date on package. It is best to allow pouches to reach room temperature before opening.



02

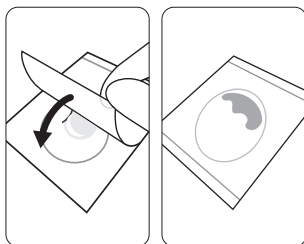
Seal by folding the end of the pouch over and applying adhesive tape. To prevent exposure to moisture, do not refrigerate opened pouches. Store resealed pouches in a cool dry place (20–25°C/<60% RH) for no longer than four weeks.

Inoculation



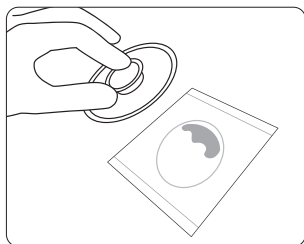
03

Place the Petrifilm Rapid Aerobic Count Plate on **level** surface. Lift the top film and with the pipette **perpendicular** dispense 1 mL of sample suspension onto the center of bottom film.



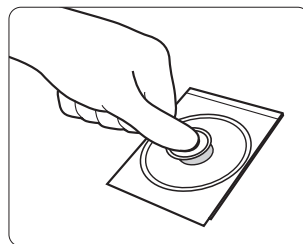
04

Roll top film down onto sample **gently** to prevent pushing sample off film and to avoid entrapping air bubbles.



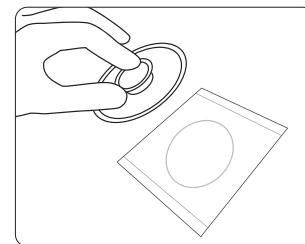
05

Place the Petrifilm Flat Spreader on the center of the Petrifilm Rapid Aerobic Count Plate.



06

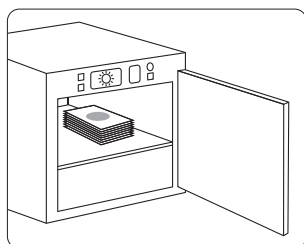
Gently apply pressure on spreader to distribute inoculum over circular area. **Do not** twist or slide the spreader.



07

Lift spreader. Wait a minimum of one minute for gel to solidify.

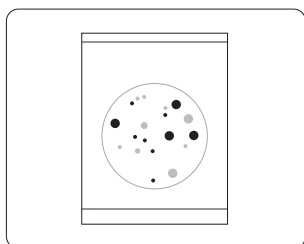
Incubation



08

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



09

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

Use Appropriate Sterile Diluents

Butterfield's phosphate buffer, buffered peptone water, 0.1% peptone water, peptone salt diluent, saline solution (0.85–0.90%), Wide-Spectrum Neutralizer, bisulfite-free letheen broth or distilled water.

Do not use diluents containing citrate, bisulfite or thiosulfate with the Petrifilm Rapid Aerobic Count Plates; they can inhibit growth.

If citrate buffer is indicated in the standard procedure, substitute with 0.1% peptone water, warmed to 40–45°C.

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

User's Responsibilities: Neogen Petrifilm Plate performance has not been evaluated with all combinations of microbial flora, incubation conditions and food matrices. It is the user's responsibility to determine that any test methods and results meet the user's requirements. Should re-printing of this Interpretation Guide be necessary, user's print settings may impact picture and color quality.

Neogen offers a full line of products to accomplish a variety of your microbial testing needs.

For more product information, visit info.neogen.com/petrifilm



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