It is easy to interpret the Petrifilm Aerobic Count plate. Figure 2 shows a Petrifilm Aerobic Count plate without colonies.

Figure 3 shows a Petrifilm Aerobic Count plate with a few bacterial colonies. A red indicator dye in the plate colours the colonies. Count all red colonies regardless of sizes or colour intensities. Use a standard Quebec-type counter to read the Petrifilm plate.

As with an agar pour plate, the preferable counting range on a Petrifilm Aerobic Count plate is 25-250 colonies. See figure 4.

When colonies number more than 250 as in figure 5, estimate the count. Determine the average number of colonies in one square (1 cm²) and multiply it by 20 to obtain the total count per plate. The inoculated area on a Petrifilm Aerobic Count plate is approximately 20 cm².
Count = TNTC
Figure 6 shows a Petrifilm Aerobic Count plate with colonies that are too numerous to count (TNTC).

Count = TNTC
With very high counts, the entire growth area may turn pink, as shown in figure 7. You might observe individual colonies only at the edge of the growth area. Record this as a TNTC result.

Count = TNTC
Occasionally, distribution of colonies appears uneven as shown in figure 8. This is also an indication of a TNTC result. In fact, the distribution is even.

Count = TNTC
The colonies on the Petrifilm Aerobic Count plate in figure 9 appear countable at first glance. However, when you look closely at the edges of the growth area, you can see a high concentration of colonies. Record this as a TNTC result. See figure 9.
Estimated count = 160
A few species of bacteria liquify the gel in the Petrifilm Aerobic Count plate, as shown in figure 10. When this occurs, determine the average count in a few unaffected squares and then estimate the total count. Do not count red spots within the liquified area.

Count = 83
Because colonies on Petrifilm Aerobic Count plates are red, you can distinguish them from opaque food particles that cause confusion with agar pour plates. See figure 11.
**3M™ Petrifilm™ Aerobic Count Plates**

For detailed warnings, cautions, disclaimer of warranties / limited remedy, limitation of 3M liability, storage and disposal information and instructions for use, see product's package insert.

### Storage

1. Refrigerate unopened packages of 3M™ Petrifilm plates. Use before expiration date on package.
2. To seal opened package, fold end over and tape shut.
3. Keep resealed package at ≤21°C (≤70°F), ≤50%RH. Do not refrigerate opened packages. Use Petrifilm plates within one month after opening.

### Sample Preparation

4. Prepare a 1:10 or greater dilution of food sample. Weigh or pipette food product into Whirl-Pac® bag, stomacher bag, dilution bottle, or other appropriate sterile container.
5. Add appropriate quantity of diluent. These include Standard Methods phosphate buffer, 0.1% peptone water, distilled water, phosphate buffered saline, and Butterfield's buffer. Do not use buffers containing sodium citrate or thiosulfate.
6. Blend or homogenize sample per current procedure.

### Inoculation

7. Place Petrifilm plate on flat surface. Lift top film.
8. With pipette perpendicular to Petrifilm plate, place 1 ml of sample onto centre of bottom film.
9. Release top film; allow it to DROP. Do NOT roll top film down.
With ridge side down, place spreader on top film over inoculum.

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

Lift spreader. Wait one minute for gel to solidify.

Incubate Petrifilm plates with the clear side up in stacks of 20 or less, at a temperature of 35°C ±1°C for 48 ± 2 hours.

Read Petrifilm plates on a standard Quebec-type colony counter or other magnified light source. Refer to Guide to Interpretation when reading results.

Steps 9 and 10 are unique to Petrifilm Aerobic Count plates.

Note: Remember to inoculate and spread each Petrifilm plate before going on to the next.

Additional Comments