Measurement of Microorganism	[SJ-MM-012]
	2006-04-11 Supersedes prior issues
	Quality Assurance

Adopted reason of 3M Petrifilm plates method

We adopted 3M Petrifilm plates method, that offers fast, accurate and easy measurement results to us
Petrifilm plates have become the industry standard in food testing because they provide reliable results, technician-to-technician, shift-to-shift, plant-to-plant.
Plus, Petrifilm plates are AOAC(Association of Official Analytical Counsel) Official Methods that you can rely on to deliver consistently accurate and reproducible results.

Petrifilm plates are available for most microbial testing needs, including :

Aerobic Count

E.coli/Coliform Count

Yeast & Mold Count

Staph Express Count

Measurement of Microorganism

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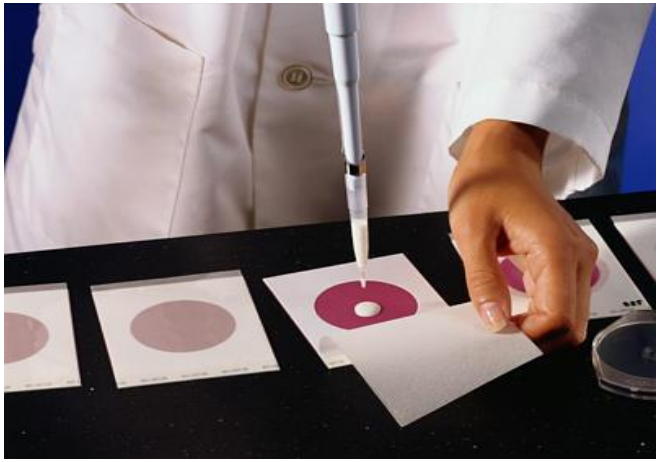
Test procedure

First step : Preparation of sample

1. **Hydrophilic dispersion sample**
   Dilute sample 1ml(g) with sterile diluent 9ml(g).
2. **Hydrophobic dispersion sample**
   After mixing 1ml(g) of sample with Polyoxyethylene Sorbitan Monooleate 1ml(g) homogeneously,
   Dilute with sterile diluent 8ml(g).

Second step : Culture

1. **After you remove the upper film, put the material 1ml as a upper on a little bit down film at middle site.**
2. **You cover the upper film from back to down softly not to be happening foam.**
3. **You press the upper film having a pressure case a little bit softly.**
4. **After 0.5-1 minute, it will be finished**



Test procedure

Third step : Distinction

1. Culture as the best temperature and time next to conditions

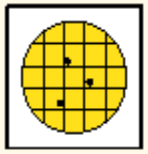
Item	Culture Temperature	Culture lasting Time
Total Bacteria	35℃	24-48hrs
Mold & Yeast	21-25℃	3-5Days
Coliforms	35℃	24hrs
Staphylococcus aures	35℃	24hrs

2. Procedure for determining Counts

Use a multiplication factor to convert the plate count to the number of colony forming units (CFU) of bacteria present per gram of sample. The multiplication factor is determined by dividing the dilution used by the volume plated.

Example 1: Single plate

1mL plated of 1:10 dilution



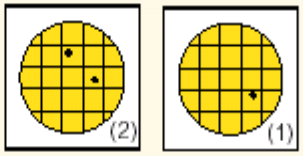
count = 3

$$\frac{10\ (1{:}10\ \text{dilution})}{1\text{mL plated}} = 10\ (\text{dilution factor})$$

3 (count) x 10 (dilution factor) ÷ 1 (mL plated) = 30 (CFU/g reported)

Example 2: Multiple plates in order to achieve higher sensitivity

1mL each plated of 1:10 dilution on two plates equals 2mL total



total count = 3

$$\frac{10\ (1{:}10\ \text{dilution})}{2\text{mL plated}} = 5\ (\text{dilution factor})$$

3 (count) x 10 (dilution factor) ÷ 2 (mL plated) = 15 (CFU/g reported)

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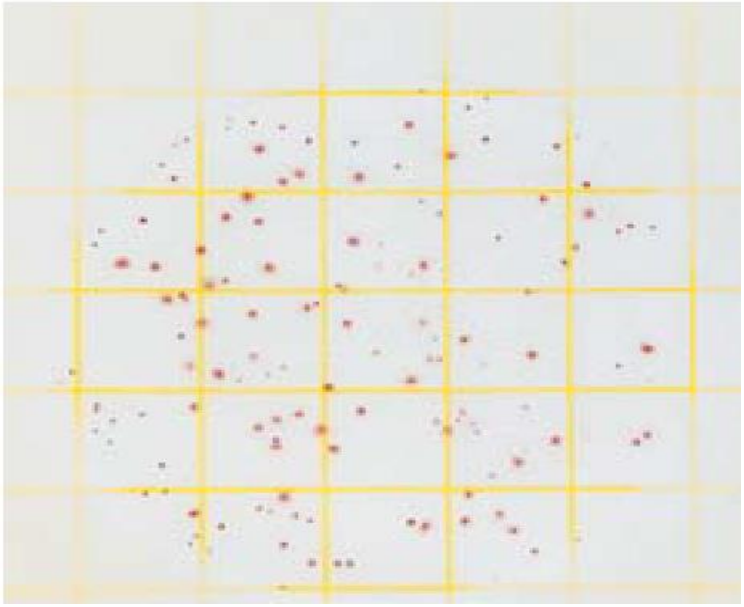

Petrifilm Aerobic Count Plate

- For enumeration of aerobic microorganisms
- An indicator dye in the plate colors all colonies red

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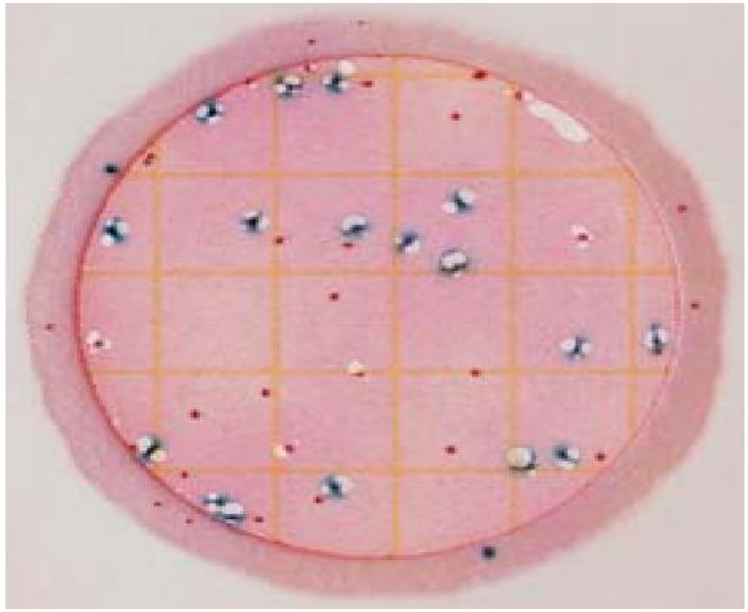
Test procedure



Petrifilm E. coli/Coliform Count Plate

- Two tests in one for enumeration of *E. coli* and coliforms
- Contains ß-glucuronidase indicator for detection of *E. coli*
- *E. coli* results in 24 hours for meat, poultry and seafood or 48 hours for all other foods
- Top film traps gas produced by coliforms and *E. coli*

Measurement of Microorganism

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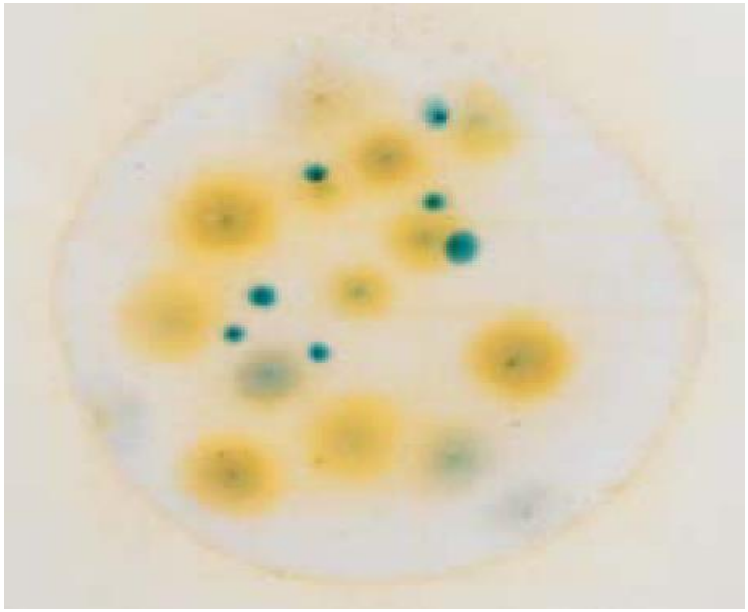
Test procedure



Petrifilm Yeast and Mold Count Plate

- For enumeration of yeast and mold
- Antibiotics incorporated into the plate inhibit bacterial growth
- An indicator dye stains yeast colonies to provide contrast. Molds may produce their own pigment

Measurement of Microorganism

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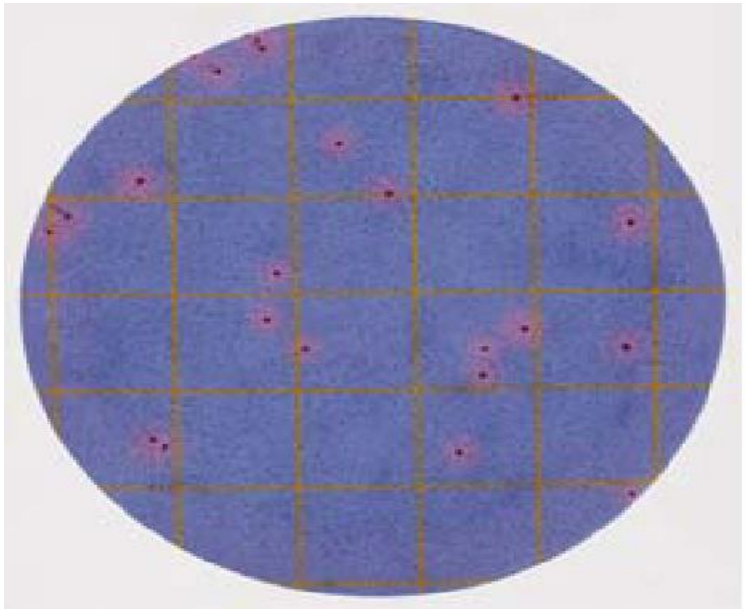
Test procedure



Petrifilm Rapid S. aureus Count Plate and Disk

- For enumeration of *Staphylococcus aureus*
- Plates and disks must be used together as a system
- An indicator dye in the disk colors colonies red. Toluidine Blue-O facilitates the visualization of thermostable nuclease (TNase) reaction by producing a pink zone around *S. aureus* colonies
- *S. aureus* results in as few as 26 hours