



# 3M Food Safety

3M™ Petrifilm™ Plates



Sample  
Plates

**3M**



## 3M™ Petrifilm™ Plates

# Fast, easy-to-use and reliable

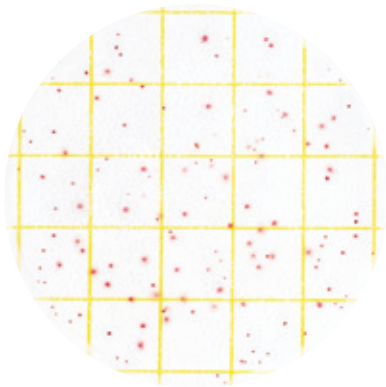
- Ready-to-use plates
- Proven test methods
- Consistent, reliable results
- Improves productivity
- Compact size maximizes incubator space
- Less storage space required
- Reduced waste and waste disposal costs
- Simplified and improved stock control

Unique ready-to-use technology  
for microbiological testing.

Visit the 3M Food Safety website at [www.3M.com/FoodSafety](http://www.3M.com/FoodSafety) for more information regarding validations, recognition and product information.



## 3M™ Petrifilm™ Aerobic Count Plate



**Count: 135**

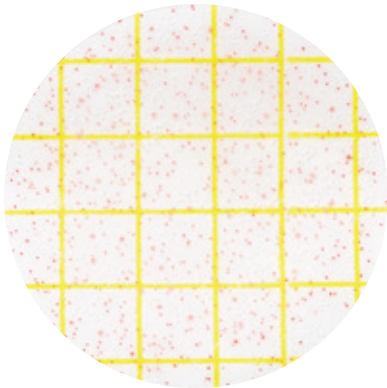
## 3M™ Petrifilm™ Aerobic Count Plate

Product Code	6400 (box of 100 units) 6406 (box of 1000 units)
Method: AOAC Official Method of Analysis <sup>SM</sup>	<b>Milk and Dairy Products</b> 48h ± 3h at 32°C ± 1°C <b>All Other Foods</b> 48h ± 3h at 35°C ± 1°C
Method: AFNOR	<b>For All Foods</b> 72h ± 4h at 30°C ± 1°C <b>All Foods Except Dairy and Raw Shell Fish</b> 48h ± 2h at 30°C ± 1°C
Incubation	Stacks of 20 or less
Optimum pH Range	6.6–7.2
Recommended Counting Range	<300 CFU
Counting Area	20 cm <sup>2</sup>
Spreader Type	Standard, ridge side down

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## 3M™ Petrifilm™ Aerobic Count Plate



**Count: TNTC**

Estimated Count: 560

Estimate count by counting colonies in one square and multiply by 20 (counting area)

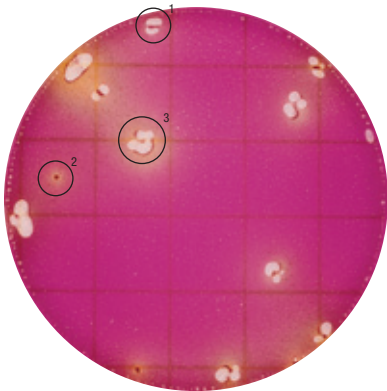
## 3M™ Petrifilm™ Aerobic Count Plate

Product Code	6400 (box of 100 units) 6406 (box of 1000 units)
Method: AOAC Official Method of Analysis <sup>SM</sup>	<b>Milk and Dairy Products</b> 48h ± 3h at 32°C ± 1°C <b>All Other Foods</b> 48h ± 3h at 35°C ± 1°C
Method: AFNOR	72h ± 4h at 30°C ± 1°C 48h ± 2h at 30°C ± 1°C
Incubation	Stacks of 20 or less
Optimum pH Range	6.6–7.2
Recommended Counting Range	<300 CFU
Counting Area	20 cm <sup>2</sup>
Spreader Type	Standard, ridge side down

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## 3M™ Petrifilm™ Enterobacteriaceae Count Plate



### ***Enterobacteriaceae* Count: 13**

Circle 1: Colonies associated with gas bubbles and no acid zones

Circle 2: Colonies with yellow acid zones but no gas production

Circle 3: Colonies producing both gas and acid



## 3M™ Petrifilm™ Enterobacteriaceae Count Plate

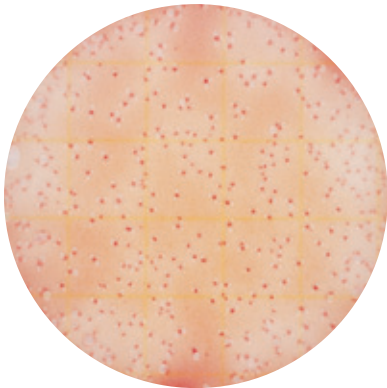
Product Code	6420 (box of 50 units) 6421 (box of 1000 units)
Method: AOAC Official Method of Analysis <sup>SM</sup>	<b>Selected Foods</b> 24h ± 2h at 37°C ± 1°C
Method: AFNOR	24h ± 2h at 30°C ± 1°C or 35°C ± 1°C or 37°C ± 1°C
Incubation	Stacks of 20 or less
Optimum pH Range	6.5–7.5
Recommended Counting Range	<100 CFU
Counting Area	20 cm <sup>2</sup>
Spreader Type	Standard, flat side down

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## 3M™ Petrifilm™ Enterobacteriaceae Count Plate



***Enterobacteriaceae* Count: TNTC**

Estimated Count: 380

Estimate count by counting colonies in one square and multiply by 20 (counting area)

One of the following characteristics should be present when determining TNTC: Light color background, many small colonies or many gas bubbles



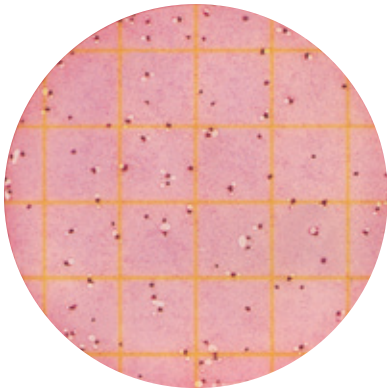
## 3M™ Petrifilm™ Enterobacteriaceae Count Plate

Product Code	6420 (box of 50 units) 6421 (box of 1000 units)
Method: AOAC Official Method of Analysis <sup>SM</sup>	<b>Selected Foods</b> 24h ± 2h at 37°C ± 1°C
Method: AFNOR	24h ± 2h at 30°C ± 1°C or 35°C ± 1°C or 37°C ± 1°C
Incubation	Stacks of 20 or less
Optimum pH Range	6.5–7.5
Recommended Counting Range	<100 CFU
Counting Area	20 cm <sup>2</sup>
Spreader Type	Standard, flat side down

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## 3M™ Petrifilm™ Coliform Count Plate



AOAC INTERNATIONAL validated method  
**Coliform Count: 69** (colonies with gas)

AFNOR validated method  
**Coliform Count: 97** (colonies with and without gas)

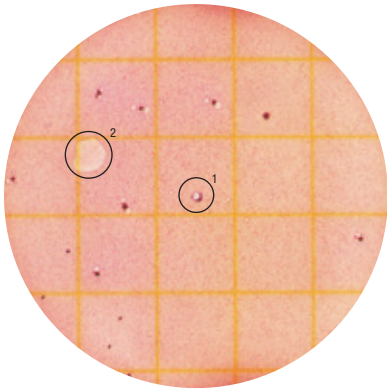
## 3M™ Petrifilm™ Coliform Count Plate

Product Code	6410 (box of 50 units) 6416 (box of 1000 units)
Method: AOAC Official Method of Analysis <sup>SM</sup>	<b>Milk and Other Dairy Products</b> 24h ± 2h at 32°C ± 1°C <b>Foods</b> 24h ± 2h at 35°C ± 1°C
Method: AFNOR	<b>All Food Types Except Shellfish</b> 24h ± 2h at 30°C ± 1°C <b>Thermotolerant (Fecal) Coliforms: All Food Types</b> 24h ± 2h at 44°C ± 1°C
Incubation	Stacks of 20 or less
Optimum pH Range	6.6–7.2
Recommended Counting Range	<150 CFU
Counting Area	20 cm <sup>2</sup>
Spreader Type	Standard, flat side down

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## 3M™ Petrifilm™ Coliform Count Plate

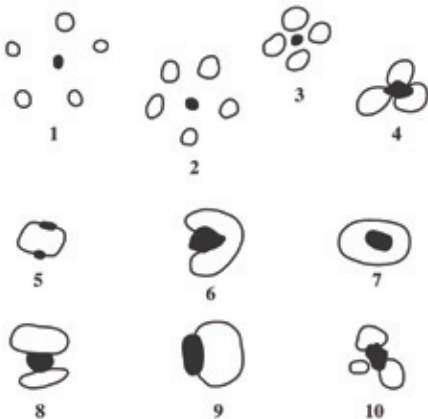


### **Coliform Count: 8**

Circle 1: Gas may disrupt the colony so that the colony “outlines” the bubble

Circle 2: Artifact bubble may be caused from trapped air within the sample or improper inoculation

# 3M™ Petrifilm™ Coliform Count Plate

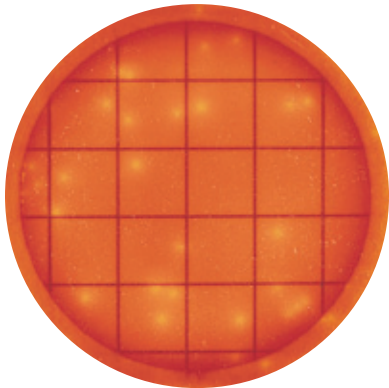


Examples 1–10 show various bubble patterns associated with gas producing colonies

This example applies to the following plates:  
HSCC, CC, EC/CC, EB, RCC



## 3M™ Petrifilm™ Rapid Coliform Count Plate



Coliform Enumeration by Acid Zones **(6–14h)**

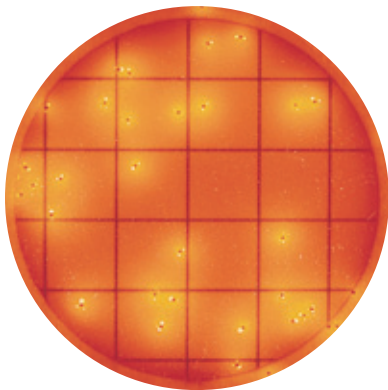
## 3M™ Petrifilm™ Rapid Coliform Count Plate

Product Code	6402 (box of 50 units) 6412 (box of 500 units)
Method: AOAC Official Method of Analysis <sup>SM</sup>	<b>Foods</b> 24h ± 2h at 35°C ± 1°C
Method: AFNOR	14h result (as compared to VRBL 30°C method) 24h result (as compared to VRBL 30°C method) (Incubate at 30°C for processed pork products) 24h result (as compared to MPN method)
Incubation	Stacks of 20 or less
Optimum pH Range	6.5–7.5
Recommended Counting Range	<150 CFU
Counting Area	20 cm <sup>2</sup>
Spreader Type	Standard, flat side down

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# 3M™ Petrifilm™ Rapid Coliform Count Plate



Coliform Colony Enumeration (8–24h)

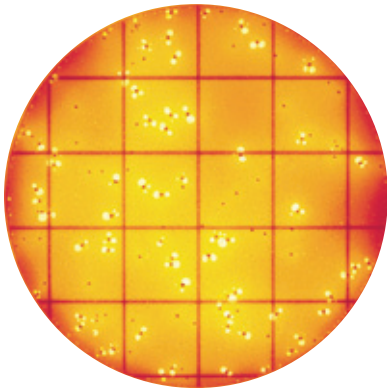
## 3M™ Petrifilm™ Rapid Coliform Count Plate

Product Code	6402 (box of 50 units) 6412 (box of 500 units)
Method: AOAC Official Method of Analysis <sup>SM</sup>	<b>Foods</b> 24h ± 2h at 35°C ± 1°C
Method: AFNOR	14h result (as compared to VRBL 30°C method) 24h result (as compared to VRBL 30°C method) (Incubate at 30°C for processed pork products) 24h result (as compared to MPN method)
Incubation	Stacks of 20 or less
Optimum pH Range	6.5–7.5
Recommended Counting Range	<150 CFU
Counting Area	20 cm <sup>2</sup>
Spreader Type	Standard, flat side down

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## 3M™ Petrifilm™ Rapid Coliform Count Plate



Coliform Colony Enumeration (**24h**)

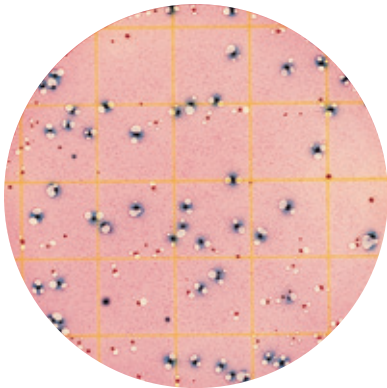
## 3M™ Petrifilm™ Rapid Coliform Count Plate

Product Code	6402 (box of 50 units) 6412 (box of 500 units)
Method: AOAC Official Method of Analysis <sup>SM</sup>	<b>Foods</b> 24h ± 2h at 35°C ± 1°C
Method: AFNOR	14h result (as compared to VRBL 30°C method) 24h result (as compared to VRBL 30°C method) (Incubate at 30°C for processed pork products) 24h result (as compared to MPN method)
Incubation	Stacks of 20 or less
Optimum pH Range	6.5–7.5
Recommended Counting Range	<150 CFU
Counting Area	20 cm <sup>2</sup>
Spreader Type	Standard, flat side down

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## 3M™ Petrifilm™ E. coli/Coliform Count Plate



AOAC INTERNATIONAL validated method

***E. coli* Count: 49** (blue colonies with gas)

**Total Coliform Count: 87** (red and blue colonies with gas)



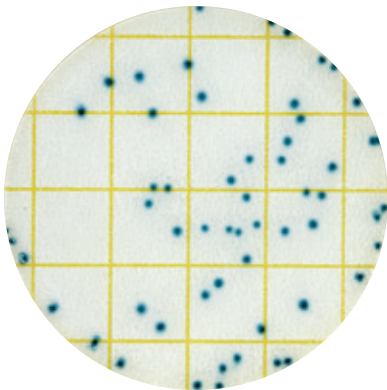
## 3M™ Petrifilm™ E. coli/Coliform Count Plate

Product Code	6404 (box of 50 units) 6414 (box of 500 units)
Method: AOAC Official Method of Analysis <sup>SM</sup>	<b>Coliform</b> 24h ± 2h at 35°C ± 1°C <b><i>E. coli</i></b> 48h ± 2h at 35°C ± 1°C <b>Poultry, Meats and Seafood Coliforms and <i>E. coli</i></b> 24h ± 2h at 35°C ± 1°C
Incubation	Stacks of 20 or less
Optimum pH Range	6.6–7.2
Recommended Counting Range	<150 CFU
Counting Area	20 cm <sup>2</sup>
Spreader Type	Standard, flat side down

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## 3M™ Petrifilm™ Select E. coli Count Plate



***E. coli* Count: 56**



## 3M™ Petrifilm™ Select E. coli Count Plate

Product Code	6434 (box of 50 units) 6435 (box of 500 units)
Method: AFNOR	24h ± 2h at 42°C ± 1°C
Incubation	Stacks of 20 or less
Optimum pH Range	6.5–7.5
Recommended Counting Range	<150 CFU
Counting Area	20 cm <sup>2</sup>
Spreader Type	Standard, flat side down

*Sold in selected regions only.*

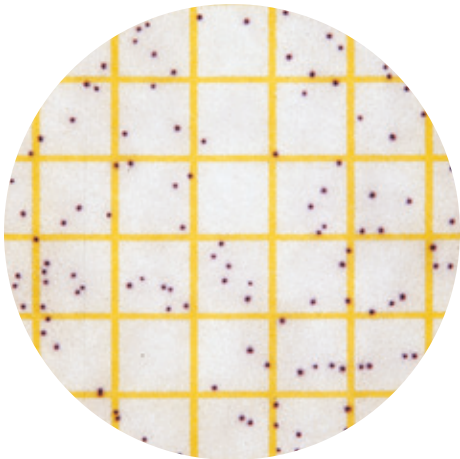
Visit the 3M Food Safety website at [www.3M.com/FoodSafety](http://www.3M.com/FoodSafety) for more information regarding validations, recognition and product information.





## 3M™ Petrifilm™ Staph Express Count Plate

Red-violet colonies are *S. aureus*



***S. aureus* Count: 116**

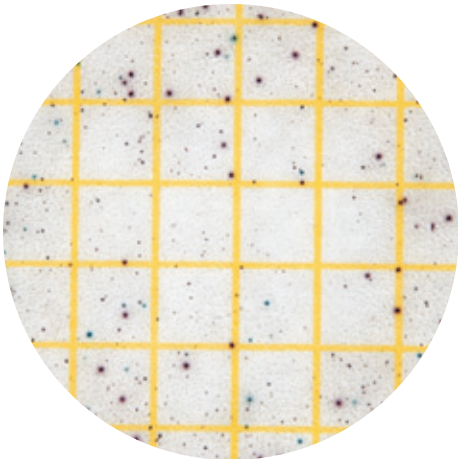
## 3M™ Petrifilm™ Staph Express Count Plate

Product Code	<b>Plates</b> 6490 (box of 50 units) 6491 (box of 500 units) <b>Disks</b> 6492 (box of 20 units) 6493 (box of 100 units)
Method: AOAC Official Method of Analysis <sup>SM</sup>	<b>Foods/Plate</b> 24h ± 2h at 35°C ± 1°C or 37 ± 1°C <b>Disk</b> 1–3h at 35°C ± 1°C or 37°C ± 1°C
Method: AFNOR	<b>Foods/Plate</b> 24h ± 2h at 37°C ± 1°C <b>Disk</b> 3h at 37°C ± 1°C
Incubation	Stacks of 20 or less
Optimum pH Range	6.0–8.0
Recommended Counting Range	<150 CFU
Counting Area	30 cm <sup>2</sup>
Spreader Type	Staph Express Spreader (6425)

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## 3M™ Petrifilm™ Staph Express Count Plate



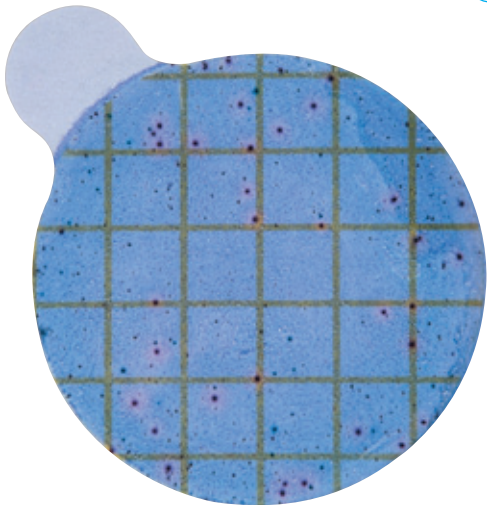
Red-violet colonies are *S. aureus*

Blue-green colonies are not *S. aureus*

Black colonies may or may not be *S. aureus*

In this case, a disc must be used before counting *S. aureus*

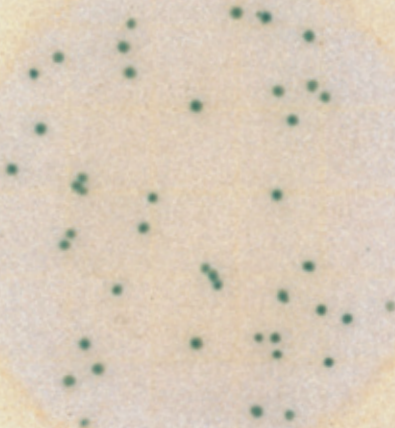
## 3M™ Petrifilm™ Staph Express Count Plate



Pink zones form when DNase reaction from *S. aureus*



## 3M™ Petrifilm™ Yeast and Mold Count Plate



**Yeast Count: 44**

Yeast Characteristics: Small colonies, colony has defined edges, color can range off-white to blue-green, colony may appear raised and typically uniform in color — no fading



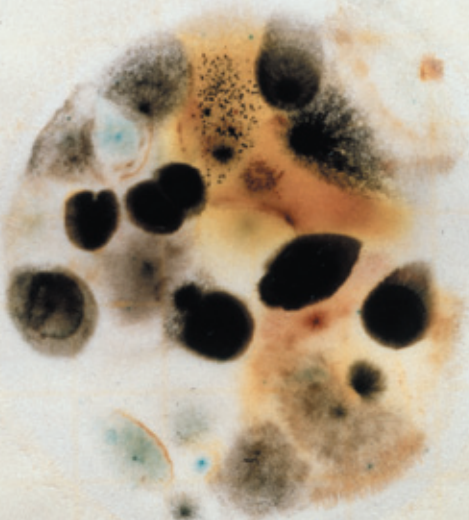
## 3M™ Petrifilm™ Yeast and Mold Count Plate

Product Code	6407 (box of 100 units) 6417 (box of 1000 units)
Method: AOAC Official Method of Analysis <sup>SM</sup>	<b>Foods</b> 5 days at 21–25°C
Incubation	Stacks of 20 or less
Optimum pH Range	N/A
Recommended Counting Range	<150 CFU
Counting Area	30 cm <sup>2</sup>
Spreader Type	Yeast and Mold Spreader

Visit the 3M Food Safety website at [www.3M.com/FoodSafety](http://www.3M.com/FoodSafety) for more information regarding validations, recognition and product information.



## 3M™ Petrifilm™ Yeast and Mold Count Plate

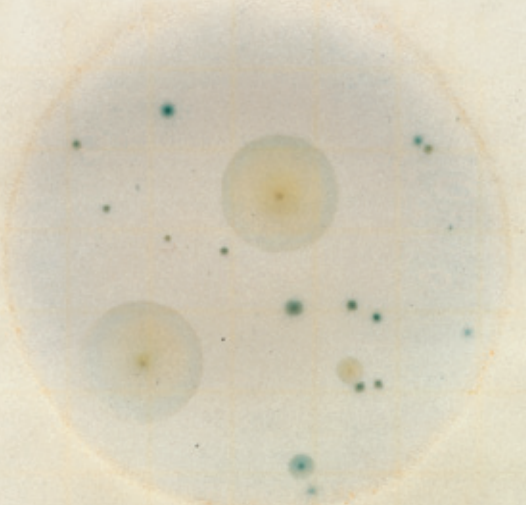


**Mold Count: 27**

**Mold Characteristics:** Diffused edges, variable color, colonies appear flat and usually a foci in the middle of colonies

# 3M™ Petrifilm™ Yeast and Mold Count Plate

Contains both yeast colonies and mold colonies

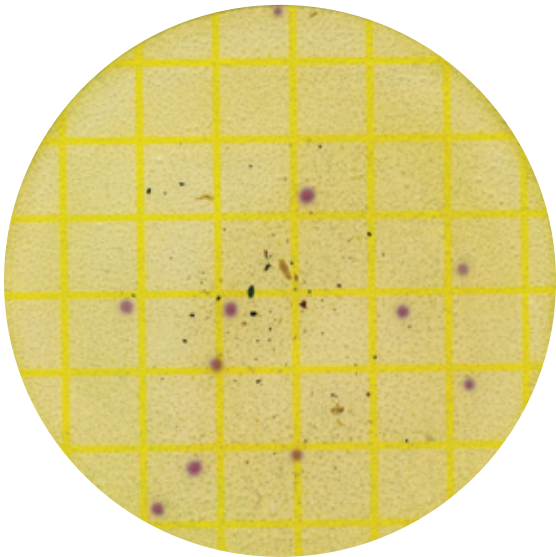
A circular Petrifilm yeast and mold count plate is shown. The plate has a light blue background with a grid of faint lines. There are two large, circular, yellowish colonies in the center and lower-left. There are 16 smaller, greenish, circular colonies scattered across the plate. There are 4 small, dark, irregular colonies scattered across the plate.

**Total Count: 20**  
Yeast Count: 16  
Mold Count: 4





## 3M™ Petrifilm™ Environmental Listeria Count Plate



***Listeria* Count: 11**

## 3M™ Petrifilm™ Environmental Listeria Count Plate

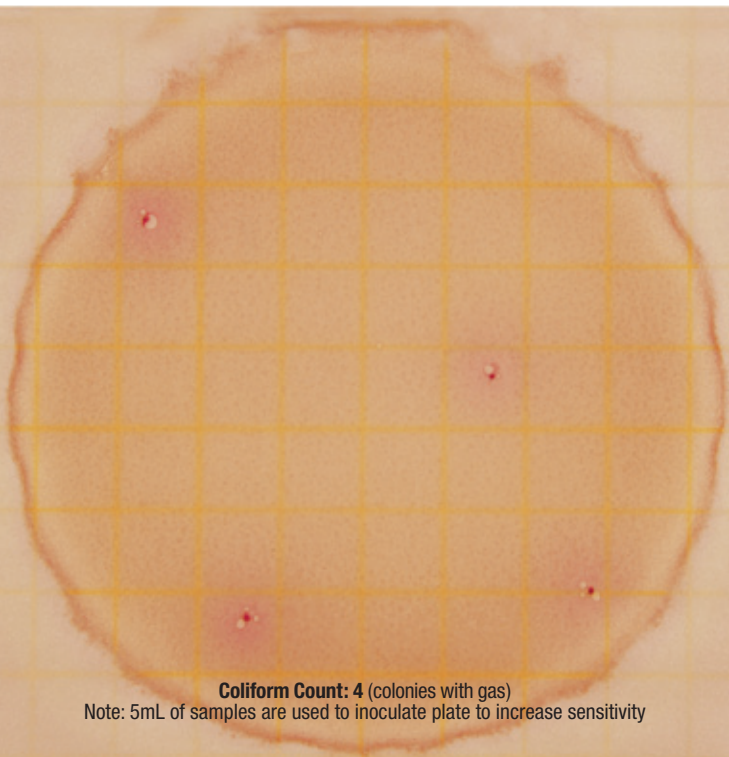


Product Code	6447 (box of 50 units) 6448 (box of 200 units)
Method: AOAC Performance Tested Method	To sample add 2mLs BPW for 1mL sample or 5mLs BPW for 10mL sample Leave at room temperature for 1 to 1.5 hours Plate and incubate: 28h ± 2h at 35°C ± 1°C or 28h ± 2h at 37°C ± 1°C (do not exceed 30 hours incubation)
Incubation	Stacks of 10 or less
Optimum pH Range	Not Applicable
Recommended Counting Range	Not Applicable
Counting Area	42 cm <sup>2</sup>
Spreader Type	PEL Spreader (6498)

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## 3M™ Petrifilm™ High-Sensitivity Coliform Count Plate



**Coliform Count: 4** (colonies with gas)

Note: 5mL of samples used to inoculate plate to increase sensitivity

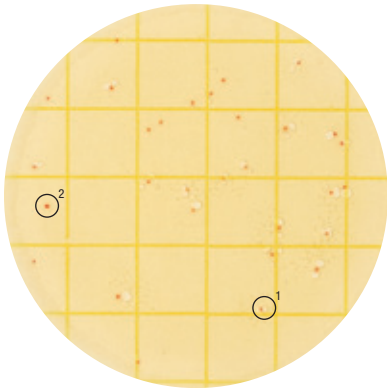
## 3M™ Petrifilm™ High Sensitivity Coliform Count Plate

Product Code	6405 (box of 50 units) 6415 (box of 500 units)
Method: AOAC Official Method of Analysis <sup>SM</sup>	<b>AOAC in Dairy Products</b> 24h ± 2h at 32°C ± 1°C <b>Other Foods</b> 24h ± 2h at 35°C ± 1°C
Method: AFNOR	<b>Coliforms</b> 24h ± 2h at 30°C ± 1°C or 35°C ± 1°C or 37°C ± 1°C <b>Thermotolerant Coliforms</b> 24h ± 2h at 44°C ± 1°C (Incubator humidification is required at this elevated temperature)
Incubation	Stacks of 10 or less
Optimum pH Range	6.5–7.5
Recommended Counting Range	<150 CFU
Counting Area	60 cm <sup>2</sup>
Spreader Type	HSCC Spreader (6481)

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## Anaerobic Lactic Acid Bacteria Test with 3M™ Petrifilm™ Aerobic Count Plate



### **Lactic Acid Bacteria Count: 30**

Circle 1: Heterofermentative (gas-producing organism)

Circle 2: Homofermentative (non gas-producing organism)



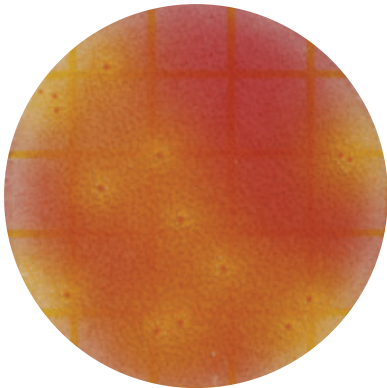
## Anaerobic Lactic Acid Bacteria Test with 3M™ Petrifilm™ Aerobic Count Plate

Product Code	6400 (box of 100 units) 6406 (box of 1000 units)
Method	Incubate plates anaerobically at 48h ± 3h at 30–35°C
Broth Requirements for Method	Prepare MRS broth to a concentration of 2 times (2X) the suggested manufacturer's quantity and sterilize  Combine 0.5mL of MRS broth and 0.5mL of sample dilution (1:10) and plate (result is a 1:20 dilution)
Incubation	Anaerobically stacks of 20 or less
Optimum pH Range	Not Applicable
Recommended Counting Range	<250 CFU
Counting Area	20 cm <sup>2</sup>
Spreader Type	Standard, ridge side down

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## Aerobic Lactic Acid Bacteria Test with 3M™ Petrifilm™ Aerobic Count Plate



### **Lactic Acid Bacteria Count: 15**

Colony color can vary from faint to dark pink depending on organism and sample

Bacteria shown: *Lactobacillus*



## Aerobic Lactic Acid Bacteria Test with 3M™ Petrifilm™ Aerobic Count Plate

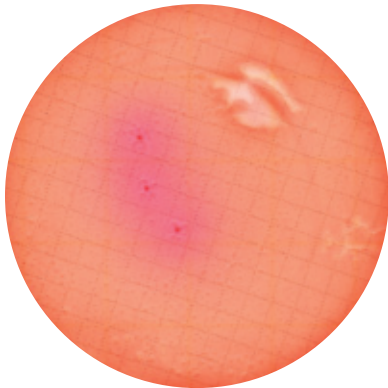
Product Code	6400 (box of 100 units) 6406 (box of 1000 units)
Method	Customer Validate
Broth Requirements for Method	Prepare broth by combining MRS powdered media at <b>twice</b> label instructions with 42mg Chlorophenol Red per 100mL broth OR purchase premade broth Cat# LM406
Incubation	Aerobically stacks of 20 or less
Optimum pH Range	Not Applicable
Recommended Counting Range	Validated by customer
Counting Area	20 cm <sup>2</sup>
Spreader Type	Standard, ridge side down

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## 3M™ Petrifilm™ Aqua Coliform Count Plate — Using Filter



### **Coliform Count: 3**

Observation: Coliforms produce acid (faint pink halo associated with colonies) and are associated with gas bubbles



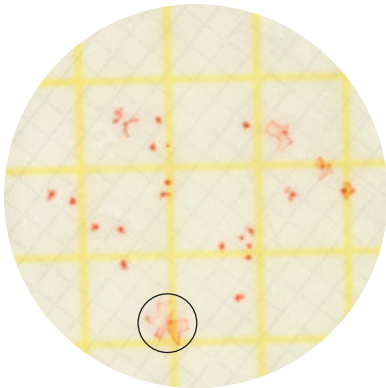
## 3M™ Petrifilm™ Aqua Coliform Count Plate — Using Filter

Product Code	6457 (box of 50 units) 6458 (box of 1000 units) Membrane filter required; Hydrate plate before inserting filter
AOAC Performance Tested Method	24h ± 2h at 35° ± 0.5°C
Method: AFNOR <b>Coming Soon — Estimated 2012</b>	24h ± 2h at 36°C ± 2°C
Incubation	Stacks of 20 or less
Optimum pH Range	Not Applicable
Recommended Counting Range	Not Applicable
Counting Area	20 cm <sup>2</sup>
Spreader Type	Standard, flat side down

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## 3M™ Petrifilm™ Aqua Heterotrophic Count Plate — Filter or Direct Plating



**Heterotrophic Count: 24**

Observation: Note colony morphology is altered by colony-associated gas production (see circle for example)



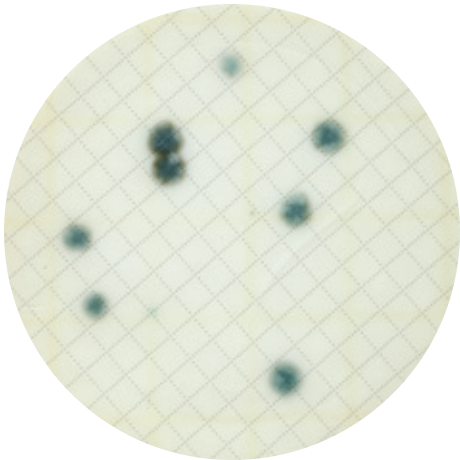
## 3M™ Petrifilm™ Aqua Heterotrophic Count Plate — Filter or Direct Plating

Product Code	6450 (box of 100 units) 6452 (box of 1000 units) If using filter, hydrate plate before inserting filter
Method	<b>Plate with Filter Procedure:</b> 48 ± 3h at 35° ± 2°C (SMEWW) <b>Direct Plate Procedure:</b> 68 ± 4h at 22° ± 2°C (ISO) 44 ± 4h at 36° ± 2°C (ISO)
Method	44 ± 4h at 36° ± 2°C and 68 ± 4h at 22° ± 2°C
Incubation	Stacks of 20 or less
Optimum pH Range	Not Applicable
Recommended Counting Range	<300 Direct Plating
Counting Area	20 cm <sup>2</sup>
Spreader Type	Standard, ridge side down

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## 3M™ Petrifilm™ Aqua Yeast and Mold Count Plate — Using Filter



**Count: 10**

Observation: Note two small, faint colonies



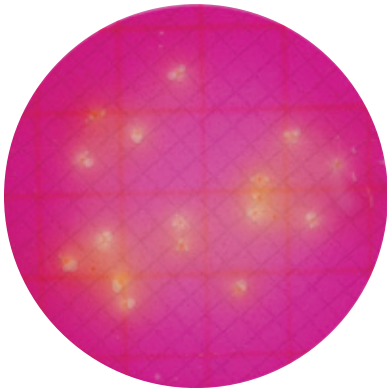
## 3M™ Petrifilm™ Aqua Yeast and Mold Count Plate — Using Filter

Product Code	6408 (box of 100 units) 6403 (box of 1000 units) Membrane filter required; Hydrate plate after placing filter
No regulations or reference methods for Y&M water testing	3–5 days at 20–25°C
Incubation	Stacks of 20 or less
Optimum pH Range	Not Applicable
Recommended Counting Range	Not Applicable
Counting Area	30 cm <sup>2</sup>
Spreader Type	Yeast and Mold Spreader

Visit the 3M Food Safety website at [www.3M.com/FoodSafety](http://www.3M.com/FoodSafety) for more information regarding validations, recognition and product information.



**3M™ Petrifilm™ Aqua Enterobacteriaceae  
Count Plate — Using Filter**



***Enterobacteriaceae* Count: 17**



## 3M™ Petrifilm™ Aqua Enterobacteriaceae Count Plate — Using Filter

Product Code	6418 (box of 50 units) 6428 (box of 1000 units) Membrane filter required; Hydrate plate before inserting filter
No regulations or reference methods for EB water testing	24 ± 2h at 35° ± 1°C
Incubation	Stacks of 20 or less
Optimum pH Range	Not Applicable
Recommended Counting Range	Not Applicable
Counting Area	20 cm <sup>2</sup>
Spreader Type	Standard, flat side down

Visit the 3M Food Safety website at [www.3M.com/FoodSafety](http://www.3M.com/FoodSafety) for more information regarding validations, recognition and product information.





## 3M™ Petrifilm™ Plates

# Shelf Life and Storage

- 18 months\* (after manufactured date)
- Store **unopened** 3M™ Petrifilm™ Plate pouches refrigerated or frozen at temperatures lower than or equal to 8°C (46°F)
- After opening 3M Petrifilm Plate pouches, seal unused plates in pouch and store at room temperature in a cool dry place; Use plates within **one month** after opening

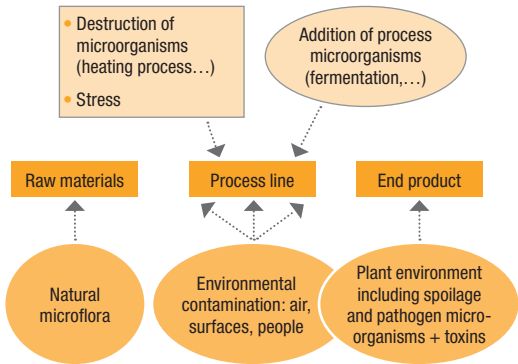
OR

- Store open pouches in a sealable container in the freezer; Plates can be used until expiration date on plates

\* 3M Petrifilm Plates have an 18 month shelf life, except Rapid Coliform Count, which has a 12 month shelf life.

# 3M™ Petrifilm™ Plates

## Why perform environmental analysis?



Visit the 3M Food Safety website at [www.3M.com/FoodSafety](http://www.3M.com/FoodSafety) for more information regarding validations, recognition and product information.



## 3M™ Petrifilm™ Plate Reader

# Saves Time and Effort

- Reads and records 3M™ Petrifilm™ Plates in only 4 seconds
- Automatically transfers data into Microsoft® Excel worksheet
- Easy exporting of data to your LIMS via text-based file output
- Software automatically calculates counts based on the dilution
- Ability to read bar code labels eliminates transcription errors

Improve  
Productivity



# 3M™ Electronic Pipettor II

## Increased accuracy and reproducible results

- Microprocessor-controlled system
- Automatically completes Self-Check
- Ergonomic design; reducing likelihood of repetitive strain injuries

## Enhanced productivity

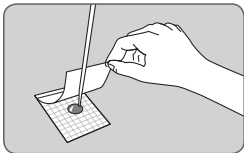
- Pre-programmed to perform common dilutions within the tip
- Open programming mode for user-set pipetting and diluting
- Multiple plating with the multi-dispense feature on 5mL Electronic Pipettor II



Visit the 3M Food Safety website at [www.3M.com/FoodSafety](http://www.3M.com/FoodSafety) for more information regarding validations, recognition and product information.

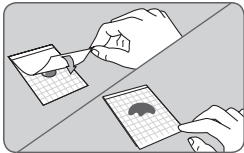


# Preparation for Surface Direct Contact and Air Sampling

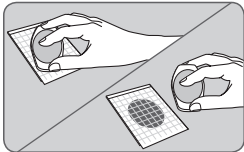


## Hydration Procedure

Place 3M™ Petrifilm™ Plate on a **level surface**. Place 1mL hydration diluent onto the center of the bottom film.



Carefully **roll** top film down so that it contacts hydration diluent and then drop the top film.



**Gently** apply pressure on spreader to distribute hydration diluent over circular area before gel is formed.

Keep plates closed for a minimum of **one hour** before use.

# Surface Sampling Method

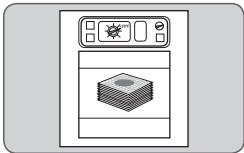


## Direct Contact Procedure

Prior to use, hydrate the 3M™ Petrifilm™ Plate. Carefully lift top film. Gel will adhere to top film.



Allow the circular gel portion of the top film to contact the surface being tested.

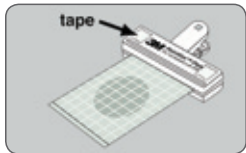


Lift film from surface and rejoin the top and bottom sheets of 3M Petrifilm Plates.

Incubate.

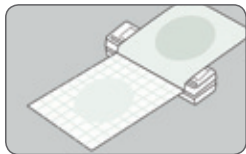
Visit the 3M Food Safety website at [www.3M.com/FoodSafety](http://www.3M.com/FoodSafety) for more information regarding validations, recognition and product information.

# Air Sampling Method



Prior to use, hydrate the 3M™ Petrifilm™ Plate with sterile buffer.

Position hinged edge of 3M Petrifilm Plate into 3M Petrifilm Plate Clip.



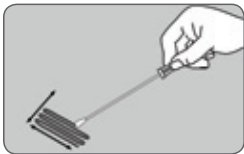
Open the 3M Petrifilm Plate and expose it to air no longer than 15 minutes. Use either double-stick tape or clip to keep plate open.

Close plate and incubate as defined by test.

## Vertical Position Option



# Surface Sampling Method



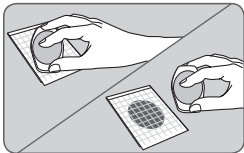
## Swab Procedure

Swab according to the usual method.

Use a sterile diluent compatible with 3M™ Petrifilm™ Plates.



Pour 1mL or pipette 1mL of sample onto the center of the bottom film.



**Gently** apply pressure on spreader to distribute inoculum over circular area before gel is formed.

Use spreader to distribute sample.

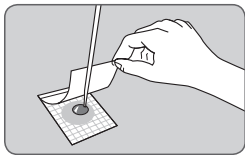
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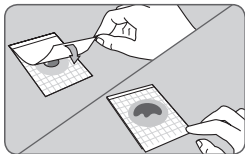


## 3M™ Petrifilm™ Aqua Plates

# Inoculation or Hydration Steps for Aqua Plates with Filters

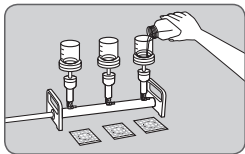


Place 3M Petrifilm Aqua Plate on a **level surface**. Place 1mL of sample or hydration diluent.

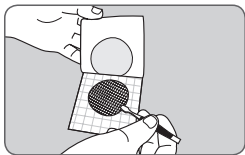


Carefully **roll** top film so that it contacts the sample or hydration diluent and then drop the top film.

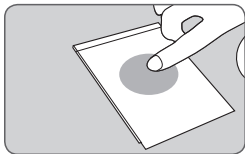
## Inoculation or Hydration Steps *(cont.)*



Following standard procedures for water analysis, membrane filter water sample using a 47mm, **0.45 micron pore size** Mixed Cellulose Ester (MCE) filter.



Place filter in the center of bottom film.



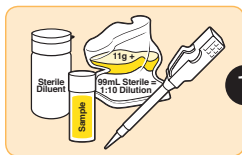
**Lightly** apply pressure to ensure uniform contact of the filter with the gel and to eliminate any air bubbles. Use spreader when recommended.

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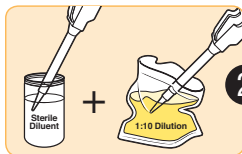


3M™ Petrifilm™ Plates

# Making Multiple Dilutions

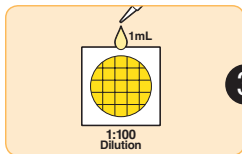


Prepare a 1:10 dilution of food sample.

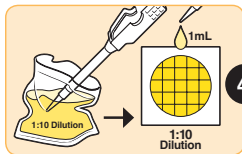


## First Plate 1:100 Dilution:

Using the 3M Electronic Pipettor II, draw up 0.9mL of sterile diluent. Then draw up 0.1mL of the 1:10 sample.



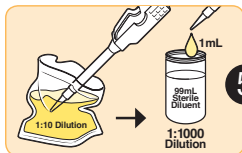
Dispense the 1mL sample onto the 3M Petrifilm Plate.



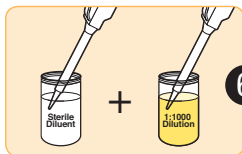
## Second Plate 1:10 Dilution:

Using the **same tip**, draw up 1mL from the 1:10 sample and dispense it onto the 3M Petrifilm Plate.

## Making Multiple Dilutions (cont.)

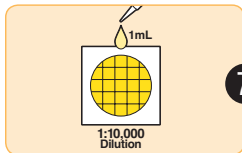


With a new tip, pull 1mL of your 1:10 sample and place into 99mL sterile diluent.

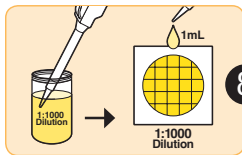


### First Plate 1:10,000 Dilution:

Using the 3M Electronic Pipettor II draw up 0.9mL of sterile diluent, then draw up 0.1mL from the 1:1000.



Dispense the 1mL sample onto the 3M Petrifilm Plate.

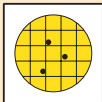


### Second Plate 1:1000 Dilution:

Using the **same tip** draw up 1mL from the 1:1000 sample and dispense it onto the 3M Petrifilm Plate.

# Determining CFU Counts Per Gram of Sample

## Example 1: Single plate



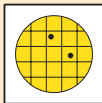
Count: 3

**1mL plated of 1:10 dilution**

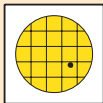
$$3 \times 10 \div 1 = 30$$

Count	Dilution Factor	mL Plated	CFU/g Reported
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## Example 2: Multiple plates in order to achieve higher sensitivity



(2)



(1)

Total Count: 3

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

$$3 \times 10 \div 2 = 15$$

Count	Dilution Factor	mL Plated	CFU/g Reported
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Add appropriate quantity of sterile diluents as defined in 3M™ Petrifilm™ Plate Package Inserts. Do not use buffers containing citrate, bisulfite, or thiosulfate; they can inhibit growth.

Method approval by private or public organizations (e.g., AOAC INTERNATIONAL or AFNOR) does not guarantee the performance of 3M™ Petrifilm™ Plates for any particular food product or process.



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[www.3M.com/foodsafety](http://www.3M.com/foodsafety)

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