

Petrifilm™

E.coli / Coliform Count Plates



“a world of learning”

Description

The Petrifilm *E.coli*/Coliform Count Plate is a ready-made culture medium system for the enumeration of *E.coli* and coliform bacteria that might be found in food and beverages, or on work surfaces. Petrifilm *E.coli*/Coliform Count Plates contain violet red bile (VRB) lactose nutrients, a cold water gelling agent, triphenyl tetrazolium chloride (TTC), an indicator that colours bacterial colonies red, and BCIG, an indicator that colours *E.coli* blue. This plate is essentially the same as the Coliform Count Plate, except that it contains the additional indicator BCIG to differentiate *E.coli* from other coliforms.

Directions For Use

1. Place the Petrifilm *E.coli*/Coliform Count Plate on a flat surface (see fig 1).
2. Lift the top film, hold the pipette perpendicular to the plate and carefully dispense 1mL of sample or sterile hydrating solution onto the centre of the bottom film (see fig 2). Sterile hydrating solution is used when you intend to test a surface by direct contact.
3. Roll the top film down onto the liquid, avoiding the entrapment of air bubbles under the top film (see fig 3).
4. Orient the plastic all-purpose spreader with the smooth side down (ridge side up) and place it on the top film over the liquid sample. Press gently on the centre of the spreader to distribute the sample evenly (see fig 4). Avoid sliding or twisting the spreader on the film. Remove the spreader and leave the plate undisturbed for one minute to allow the gel to solidify.
5. Plates treated with sterile hydrating solution should be allowed to gel for at least one hour, but may be stored in a refrigerator for up to 1 week before being used to test a surface.
6. Incubate inoculated plates in a horizontal position (clear side up) at 35°C for 24 hours. Plates may be stacked up to 20 high and placed in a press-seal bag (see fig 5). Reincubate the plates for a further 24 hours at 35°C to detect any additional *E.coli* growth.

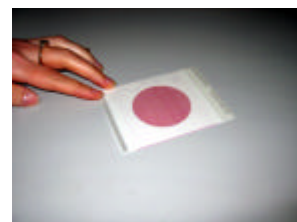


Figure 1



Figure 2



Figure 3



Figure 4

Interpretation

1. *E.coli*/Coliform Count plates will indicate *E.coli* and other coliforms in the sample. By definition, coliforms are the members of the family Enterobacteriaceae which ferment lactose to produce gas. Colonies of *E.coli* are blue to red-blue and have a bubble of gas associated with them. Other coliforms are bright red and are also associated with entrapped gas bubbles.

Note: Count only colonies that are associated with gas bubbles, regardless of their colour.

Do not count isolated (artifact) bubbles that might have been introduced during sample preparation.

2. The total coliform count is the sum of the number of red, red-blue and blue colonies that are associated with entrapped gas bubbles. The subset of coliforms that is present as *E.coli* is the number of red-blue and blue colonies that are associated with entrapped gas bubbles.
3. The presence of many small colonies, many gas bubbles, or an overall deepening of the colour of the gel probably indicates that the sample is too concentrated to give a reliable result. In this case, further dilution of the sample is required to obtain an accurate count.

Storage

Store unopened packs of Petrifilm *E.coli*/Coliform Count plates in a freezer. Allow the pack to come to room temperature before opening. After opening and removing the plates you need, the pack may be resealed with tape and/or placed in a press-seal bag and returned immediately to the freezer. After removal from the pack, plates should be kept in cool dry conditions (below 25°C and 50%RH) and used within one month.

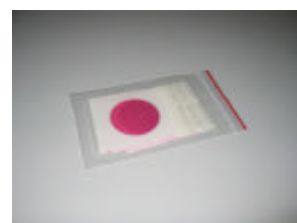


Figure 5

Safety and Disposal

Following inoculation, plates presented to the class for examination and counting should be taped shut or placed in a press-seal bag to keep them isolated. Follow good laboratory practice and have students thoroughly wash their hands after handling microbiological samples and equipment. Adequate antibacterial hand wash and hand rub sanitiser solutions should be provided.

Plates with viable colonies must be disposed of in a responsible way such as by autoclaving or soaking in an appropriate disinfectant. Alternatively, you can use a contract collection service such as that provided by Stericorp.

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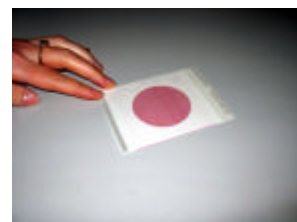


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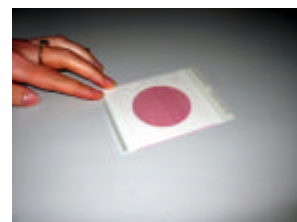


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www.southernbiological.com A Division of Cogitamus Pty Ltd ACN 097 468 954 ABN 25 838 926 933

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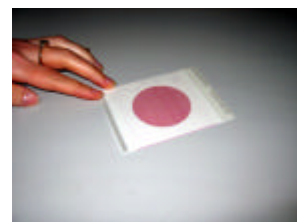


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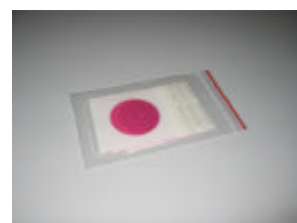


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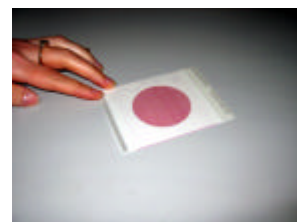


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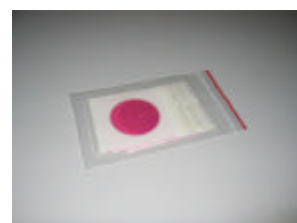


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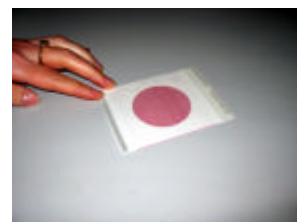


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Description

The Petrifilm *E.coli*/Coliform Count Plate is a ready-made culture medium system for the enumeration of *E.coli* and coliform bacteria that might be found in food and beverages, or on work surfaces. Petrifilm *E.coli*/Coliform Count Plates contain violet red bile (VRB) lactose nutrients, a cold water gelling agent, triphenyl tetrazolium chloride (TTC), an indicator that colours bacterial colonies red, and BCIG, an indicator that colours *E.coli* blue. This plate is essentially the same as the Coliform Count Plate, except that it contains the additional indicator BCIG to differentiate *E.coli* from other coliforms.

Directions For Use

1. Place the Petrifilm *E.coli*/Coliform Count Plate on a flat surface (see fig 1).
2. Lift the top film, hold the pipette perpendicular to the plate and carefully dispense 1mL of sample or sterile hydrating solution onto the centre of the bottom film (see fig 2). Sterile hydrating solution is used when you intend to test a surface by direct contact.
3. Roll the top film down onto the liquid, avoiding the entrapment of air bubbles under the top film (see fig 3).
4. Orient the plastic all-purpose spreader with the smooth side down (ridge side up) and place it on the top film over the liquid sample. Press gently on the centre of the spreader to distribute the sample evenly (see fig 4). Avoid sliding or twisting the spreader on the film. Remove the spreader and leave the plate undisturbed for one minute to allow the gel to solidify.
5. Plates treated with sterile hydrating solution should be allowed to gel for at least one hour, but may be stored in a refrigerator for up to 1 week before being used to test a surface.
6. Incubate inoculated plates in a horizontal position (clear side up) at 35°C for 24 hours. Plates may be stacked up to 20 high and placed in a press-seal bag (see fig 5). Reincubate the plates for a further 24 hours at 35°C to detect any additional *E.coli* growth.

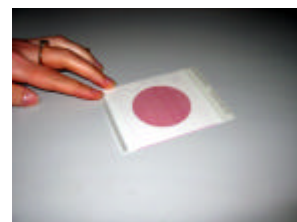


Figure 1



Figure 2



Figure 3



Figure 4

Interpretation

1. *E.coli*/Coliform Count plates will indicate *E.coli* and other coliforms in the sample. By definition, coliforms are the members of the family Enterobacteriaceae which ferment lactose to produce gas. Colonies of *E.coli* are blue to red-blue and have a bubble of gas associated with them. Other coliforms are bright red and are also associated with entrapped gas bubbles.

Note: Count only colonies that are associated with gas bubbles, regardless of their colour.

Do not count isolated (artifact) bubbles that might have been introduced during sample preparation.

2. The total coliform count is the sum of the number of red, red-blue and blue colonies that are associated with entrapped gas bubbles. The subset of coliforms that is present as *E.coli* is the number of red-blue and blue colonies that are associated with entrapped gas bubbles.
3. The presence of many small colonies, many gas bubbles, or an overall deepening of the colour of the gel probably indicates that the sample is too concentrated to give a reliable result. In this case, further dilution of the sample is required to obtain an accurate count.

Storage

Store unopened packs of Petrifilm *E.coli*/Coliform Count plates in a freezer. Allow the pack to come to room temperature before opening. After opening and removing the plates you need, the pack may be resealed with tape and/or placed in a press-seal bag and returned immediately to the freezer. After removal from the pack, plates should be kept in cool dry conditions (below 25°C and 50%RH) and used within one month.

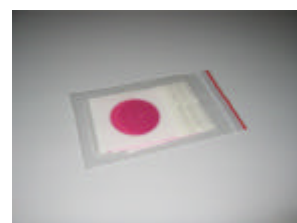


Figure 5

Safety and Disposal

Following inoculation, plates presented to the class for examination and counting should be taped shut or placed in a press-seal bag to keep them isolated. Follow good laboratory practice and have students thoroughly wash their hands after handling microbiological samples and equipment. Adequate antibacterial hand wash and hand rub sanitiser solutions should be provided.

Plates with viable colonies must be disposed of in a responsible way such as by autoclaving or soaking in an appropriate disinfectant. Alternatively, you can use a contract collection service such as that provided by Stericorp.

More Information

To receive a full colour "pdf" version of these notes, please email a request to sales@southernbiological.com.

For further information about Coliform Count plates and other Petrifilm products, please visit the "Catalogue" section of our web site. You'll find more suggestions for student experiments as well as further details on sample preparation, usage techniques and interpretation of results.

To attend a participative hands-on workshop on how to successfully introduce Petrifilm to your school science curriculum, consult the "Events" section of our web site to check times and locations.

In addition, we would welcome a call if you have any remaining questions relating to Petrifilm and its uses.

Acknowledgement

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