


3M

Petrifilm™

6447/6448

-  (GB) **Environmental Listeria Plate**
-  (FR) **Listeria dans l'Environnement**
-  (DE) **Environmental Listeria Platte**
-  (IT) **Piastra per il controllo ambientale di Listeria**
-  (ES) **Placa para Monitoreo de Listeria en Ambientes**
-  (NL) **Environmental Listeria Plaat**
-  (SE) **Listeria plattor för hygienkontroll**
-  (FI) **EL Ympäristön Listeria**
-  (PT) **Placa para Listeria em Monitoramento Ambiental**
-  (GR) **Πλακίδιο για την ανίχνευση Listeria που απαντάται στο περιβάλλον**
-  (JP) **環境測定用プレート**

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Environmental Listeria Plate

DESCRIPTION

The 3M™ Petrifilm™ Environmental Listeria (EL) Plate is a sample-ready-culture- medium system which contains selective agents, nutrients, a cold-water-soluble gelling agent, and a chromogenic indicator that facilitates colony enumeration and/or detection. Petrifilm EL Plates were designed to analyze environmental samples and to help increase the efficiency of monitoring plant sanitation. The Petrifilm EL Plate detects the majority of environmental *Listeria*, consisting of *Listeria monocytogenes*, *Listeria innocua*, and *Listeria welshimeri*.* The presence of indicator *Listeria* such as *L. innocua* provides evidence that environmental conditions are suitable for the occurrence of *L. monocytogenes*.

* For further information on the prevalence of *Listeria* species, please contact the official 3M Food Safety representative nearest you. *L. ivanovii*, *L. grayi/murrayi* and *L. seeligeri* grow but do not form typical colonies.

Many organisms in the environment can be stressed by environmental conditions or sanitizers. Buffered peptone water is used as a repair broth in conjunction with the Petrifilm EL Plate to resuscitate stressed *Listeria* without increasing their numbers.

Petrifilm EL plate components are decontaminated and tested to ensure the efficacy of these products. 3M Food Safety is certified to ISO (International Organization for Standardization) 9001.

SAFETY INFORMATION

Please read, understand and follow all safety information contained in these instructions prior to using the 3M™ Petrifilm™ Environmental Listeria Plates. Retain these instructions for future reference.

Intended Use:

Petrifilm EL Plates are used for the enumeration and/or detection of *Listeria* in environmental samples. As with all *Listeria* testing methods, there are some risks associated with handling *Listeria* organisms. 3M anticipates that the Petrifilm Environmental Listeria Plates will be utilized by technicians that have been properly trained on the Petrifilm Plate methods.

Explanation of Signal Word Consequences

- ⚠ **WARNING:** Indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury and/or property damage.
- ⚠ **CAUTION:** Indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury and/or property damage.

Explanation of Product Label Symbols

- ⚠  **Attention: Consult Operator's Manual**

⚠ WARNING

- **To reduce the risk associated with bacterial infection:**
 - It is strongly recommended that female laboratory staff be informed of the risk to a developing fetus resulting from infection of the mother through exposure to *Listeria monocytogenes*.
 - Perform *Listeria* testing in a properly equipped laboratory under the control of a skilled microbiologist.
 - Dispose of contaminated plates according to applicable Federal, State, and/or local government regulations and/or applicable laboratory procedures.
- **To reduce the risk associated with workplace contamination:**
 - Perform *Listeria* testing in a properly equipped laboratory under the control of a skilled microbiologist.

⚠ CAUTION

- **To reduce the risk associated with misdiagnosis resulting in the disposal of non-contaminated products (property damage):**
 - Use the Petrifilm Environmental Listeria Plates for environmental testing only.
 - Use Petrifilm Environmental Listeria Plates only with surfaces, sanitizers, protocols and bacterial strains that you have validated.
- **To reduce the risk associated with misdiagnosis resulting in release of contaminated product:**
 - Use the Petrifilm Environmental Listeria Plates for environmental testing only.
 - Use Petrifilm Environmental Listeria Plates only with surfaces, sanitizers, protocols and bacterial strains that you have validated.
- **To reduce the risk associated with clinical misdiagnosis:**
 - Do not use the Petrifilm Environmental Listeria Plates in the diagnosis of conditions in humans or animals.

For information on documentation of product performance contact your official 3M Food Safety representative.

USER RESPONSIBILITY

No one culture medium will always recover the exact same strains or enumerate a particular strain exactly as does another medium. In addition, external factors such as sampling methods, testing protocols, preparation time and handling may influence recovery and enumeration.

It is the user's responsibility in selecting any test method to evaluate a sufficient number of environmental samples with particular microbial challenges to satisfy the user that the chosen test method meets the user's criteria.

It is also the user's responsibility to determine that any test methods and results meet its customers' or suppliers' requirements.

As with any culture medium, Petrifilm EL Plate results do not constitute a guarantee of quality of food or beverage products or processes that are tested with the plates.

The user must train its personnel in proper testing techniques: for example, Good Laboratory Practices (U.S. Food and Drug Administration, Title 21, Part 58 of the Code of Federal Regulations) or ISO 17025.

DISCLAIMER OF WARRANTIES / LIMITED REMEDY

UNLESS OTHERWISE PROHIBITED BY LAW, 3M DISCLAIMS ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE. If any 3M Petrifilm Plate is proven to be defective, 3M or its authorized distributor will replace or, at its option, refund the purchase price of any plate. These are your exclusive remedies. You must promptly notify 3M within sixty days of discovery of any suspected defect in a product and return the product to 3M. Please call Customer Service (1-800-328-1671 in the U.S.) or your official 3M Food Safety representative for a Returned Goods Authorization.

LIMITATION OF 3M LIABILITY

UNLESS OTHERWISE PROHIBITED BY LAW, 3M WILL NOT BE LIABLE TO USER OR OTHERS FOR ANY LOSS OR DAMAGE, WHETHER DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, LOST PROFITS. Except where prohibited by law, in no event shall 3M's liability under any legal theory exceed the purchase price of the plates alleged to be defective. Customer may have additional rights and should seek advice in country of purchase.

STORAGE AND DISPOSAL

Store unopened Petrifilm Plate pouches refrigerated or frozen at temperatures $\leq 8^{\circ}\text{C}$ (46°F). Just prior to use, allow unopened pouches to come to room temperature before opening. Return unused plates to pouch. Seal by folding the end of the pouch over and taping shut. To prevent exposure to moisture, do not refrigerate opened pouches. Store resealed pouches in a cool, dry place for no longer than one month. It is recommended that resealed pouches of Petrifilm Plates be stored in a freezer (see below) if the laboratory temperature exceeds 25°C (77°F) and/or the laboratory is located in a region where the relative humidity exceeds 50% (with the exception of air-conditioned premises).

To store opened pouches in a freezer, place Petrifilm Plates in a sealable container. To remove frozen Petrifilm Plates for use, open the container, remove the plates that are needed and immediately return remaining plates to the freezer in the sealed container. Plates should not be used past their expiration date. The freezer that is used for open pouch storage must not have an automatic defrost cycle as this would repeatedly expose the plates to moisture, which can damage the plates.

Do not use plates that show discoloration. Expiration date and lot number are noted on each package of Petrifilm Plates. The lot number is also noted on individual plates.

After use, Petrifilm EL Plates may contain microorganisms that may be a potential biohazard. Follow current industry standards for disposal.

INSTRUCTIONS FOR USE

Sample Preparation

1. Collect environmental samples using a swab, pre-moistened sponge, or other collection device. The moistening agent can be sterile diluent or a buffer such as letheen broth or neutralizing buffer.
2. Aseptically add 5 mL sterile ($20\text{-}30^{\circ}\text{C}$) buffered peptone water^{1,2} (used as a repair broth) to the collected sample.
3. Mix, homogenize, or vortex the collected sample (step #1) with repair broth for approximately one minute.
4. Allow collected sample to remain at room temperature, $20\text{-}30^{\circ}\text{C}$, for 1.0 hour up to a maximum of 1.5 hours.
5. For optimal bacterial growth or recovery, the sample should have a pH between 4 and 9.

Plating

1. Place the Petrifilm EL Plate on a flat, level surface.
2. Prior to plating, mix or vortex the collected sample again.
3. Draw 3 mL of liquid from the collected sample. For some sampling devices, such as sponges, squeeze the device to release the liquid for plating.
4. Lift the top film and with the pipette perpendicular dispense 3 mL of sample suspension onto the center of bottom film.
5. Roll the top film down onto the sample to prevent trapping air bubbles.
6. Gently place the Large Flat spreader on the center of the Plate to distribute the sample evenly over the entire Petrifilm Plate growth area.
7. Remove the spreader and leave the plate undisturbed for at least **ten** minutes to permit the gel to form.

Incubation

Incubate plates in a horizontal position with the clear side up in stacks of no more than 10 plates. Incubate Petrifilm Plates for 28 h \pm 2 h at 35°C \pm 1°C or 37°C \pm 1°C depending on local regulations/methods. **Incubation beyond the recommended time may yield ambiguous results.**

Interpretation




1. Petrifilm EL Plates can be counted or interpreted using a standard colony counter or other illuminated magnifier. The circular growth area is approximately 42 cm².
2. The Petrifilm EL Plate method can be used as a quantitative, semi-quantitative, or qualitative test.
 - a. For a quantitative test, count and record all red-violet colonies. Do not count colonies on the foam dam since they are removed from the selective influence of the medium.
 - b. For a semi-quantitative test, record results as high, medium, or low based on the relative number of red-violet colonies present. This designation of high, medium, or low is dependent upon sample location and individual plant standards.
 - c. For a qualitative test, record results of sample plated as positive (detected) or negative (not detected) based on the presence or absence of red-violet colonies.
3. **If plates have been incubated for the minimum time and they have pink and/or gray colonies, re-incubate those plates for up to the maximum incubation time to ensure optimal color development.** Count and interpret as in step 2.
4. When colonies are present in large numbers, Petrifilm EL Plates may have many small, indistinct colonies and/or a pink-brown color throughout.
 - a. For a quantitative test, record the results as too numerous to count (TNTC).
 - b. For a semi-quantitative test, record the results as high.
 - c. For a qualitative test, record the results as positive (detected).
5. Where necessary, colonies may be isolated for further identification. Lift the top film and pick the colony from the gel. Test using standard procedures.
6. If the plates cannot be counted within 1 hour of removal from the incubator, they may be stored for later enumeration by freezing in a sealed container at temperatures \leq minus 15°C for no longer than one week. Organisms may not be viable for further identification after plates have been frozen.

For further information refer to the appropriate Petrifilm Plate “Interpretation Guide.” If you have questions about specific applications or procedures, please contact your official 3M Food Safety representative nearest you.

References

1. Atlas, Ronald M. 1993. Handbook of Microbiological Media, CRC Press.
2. International Standards Organization, ISO 11290-2:1998. Microbiology of food and animal feeding stuffs – Horizontal method for the detection and enumeration of *Listeria monocytogenes* – Part 2: Enumeration method.

Explanation of symbols

-  • Attention, see instructions for use
-  2010-10 AZ • The lot in a box and the hourglass symbols are symbols that represent lot number and expiration date. The hourglass is followed by a year and month which represents the expiration date (year and month: 2010-10) The entire line after the hourglass represents the lot number. (2010 - 10 AZ).
-  • Store below given temperature.

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