

Many foods require a dilution step before plating. The following is a guide to follow when preparing dilutions. Please refer to the 3M™ Petrifilm™ plate application sheet *Use with Dairy and Juice Products* for specific dilution recommendations.

DILUTION	SAMPLE SIZE	DILUENT
1:5	10.00g	40 mL
	or	
	22.50g	90 mL
1:10	1.00g	9 mL
	or	
	10.00g	90 mL
1:20	4.74g	90 mL
	or	
	5.21g	99 mL

Diluent Volume Calculations:

$$\text{Volume of Buffer Needed} = (\text{Weight of Sample} \times \text{Dilution}) - \text{Weight of Sample}$$

Example: You have 7.5mL of sample and want to prepare 1:10 dilution.

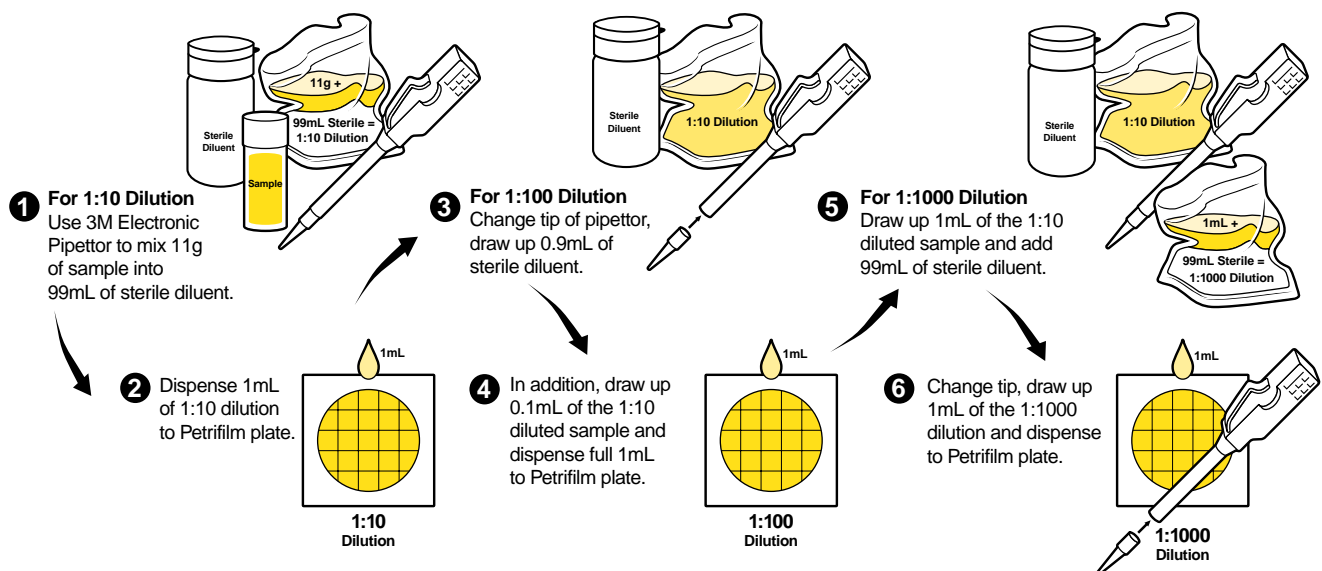
$$\left(\begin{array}{c} \text{7.5mL} \\ \text{Weight of Sample} \end{array} \times \begin{array}{c} \text{10} \\ \text{Dilution} \end{array} \right) - \begin{array}{c} \text{7.5mL} \\ \text{Weight of Sample} \end{array} = \begin{array}{c} \text{67.5mL} \\ \text{Volume of Buffer Needed} \end{array}$$

For detailed WARNING, CAUTIONS, DISCLAIMER OF WARRANTIES / LIMITED REMEDY, LIMITATION OF 3M LIABILITY, STORAGE AND DISPOSAL information, and INSTRUCTIONS FOR USE see Product's package insert.

Making Dilutions with 3M™ Electronic Pipettors:

Refer to table on front page for alternate dilution preparations.

Note: Finished milk can be tested by plating 1mL of undiluted sample directly to a Petrifilm plate.

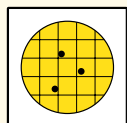


Procedure for Determining Counts:

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



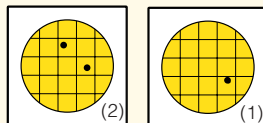
count = 3

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

$$3 \text{ (count)} \times 10 \text{ (dilution factor)} \div 1 \text{ (mL plated)} = 30 \text{ (CFU/g reported)}$$

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

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

$$3 \text{ (count)} \times 10 \text{ (dilution factor)} \div 2 \text{ (mL plated)} = 15 \text{ (CFU/g reported)}$$

Sensitivity of Petrifilm Plates:

If no colonies of bacteria appear on the plate, do not report the count as zero. Report in CFU/g as shown at right.

Most Petrifilm plates require a 1mL volume of sample. 3M™ Petrifilm™ High-Sensitivity Coliform Count Plate requires a 5mL volume of sample.

DILUTION	PETRIFILM PLATE	CFU/g
1:10	1mL plate	< 10.0
	5mL plate	< 2.0
1:5	1mL plate	< 5.0
	5mL plate	< 1.0
1:2	1mL plate	< 2.0
	5mL plate	< 0.4
Undiluted	1mL plate	< 1.0
	5mL plate	< 0.2

For greater sensitivity, a lower dilution and/or more plates may be used.

- To order Petrifilm plates in the U.S., call 1-800-328-1671
- Latin America, Africa, and Asia Pacific regions call 1-651-733-7562
- For more information visit: www.3m.com/microbiology

3M

3M Microbiology

3M Center, Building 275-5W-05
St. Paul, MN 55144-1000
USA
1 800 228-3957
microbiology@mmm.com

3M Canada

Post Office Box 5757
London, Ontario N6A 4T1
Canada
1 800 364-3577

3M Europe

Laboratoires 3M Santé
Boulevard de l'Oise
F-95029 Cergy-Pontoise Cedex
France
33 1 30 31 85 71



40% Pre-consumer waste paper
10% Post-consumer waste paper

Printed in U.S.A.
© 3M 2003 70-2009-1806-1 (23.075)ii