

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
	or	
	24.75g	99 mL
1:10	1.00g	9 mL
	or	
	10.00g	90 mL
	or	
	11.00g	99 mL
1:20	4.74g	90 mL
	or	
	5.21g	99 mL

Diluent Volume Calculations:

Volume of Buffer Needed = (Weight of Sample x Dilution) – Weight of Sample

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

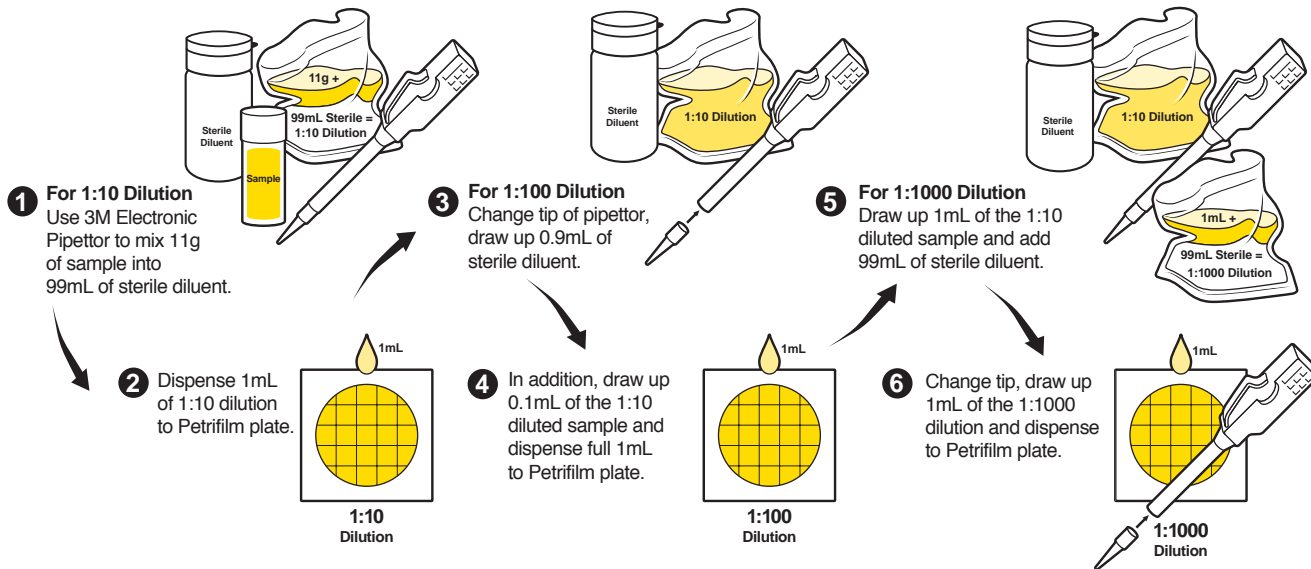
$$\left(\begin{array}{c} \text{7.5mL} \\ \text{Weight of Sample} \end{array} \times \begin{array}{c} \text{10} \\ \text{Dilution} \end{array} \right) - \begin{array}{c} \text{7.5mL} \\ \text{Weight of Sample} \end{array} = \begin{array}{c} \text{67.5mL} \\ \text{Volume of Buffer Needed} \end{array}$$

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 3M Petrifilm plate.

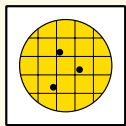


Procedure for Determining Counts:

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

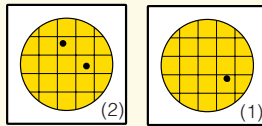
$$\frac{10 \text{ (1:10 dilution)}}{1 \text{ mL plated}} = 10 \text{ (dilution factor)}$$

$$\text{count} \times \text{dilution factor} \div \text{mL plated} = \text{CFU/g reported}$$

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

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

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

$$\text{count} \times \text{dilution factor} \div \text{mL plated} = \text{CFU/g reported}$$

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

Sensitivity of 3M 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 3M 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 3M Petrifilm Plates in the U.S., call 1-800-328-1671
- Latin America, Africa, and Asia Pacific regions call 65-64548611
- For more information visit: www.3M.com/foodsafety

3M

3M Food Safety

3M Center, Building 275-5W-05
St. Paul, MN 55144-1000
USA
1-800-328-6553
email: foodsafety@mmm.com
www.3M.com/foodsafety

3M Canada

Post Office Box 5757
London, Ontario N6A 4T1
Canada
1-800-563-2921

3M Europe & MEA

3M Deutschland GmbH
Carl-Shurz - Strasse 1
D41453 Neuss/Germany
+49-2131-14300

3M Latin America

3M Center
Bldg 275-5W-05
St. Paul, MN 55144-1000
USA
1-651-737-2239

3M AsiaPacific Pte. Ltd.

No 1, Yishun Avenue 7
Singapore, 768923
65-64508869

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