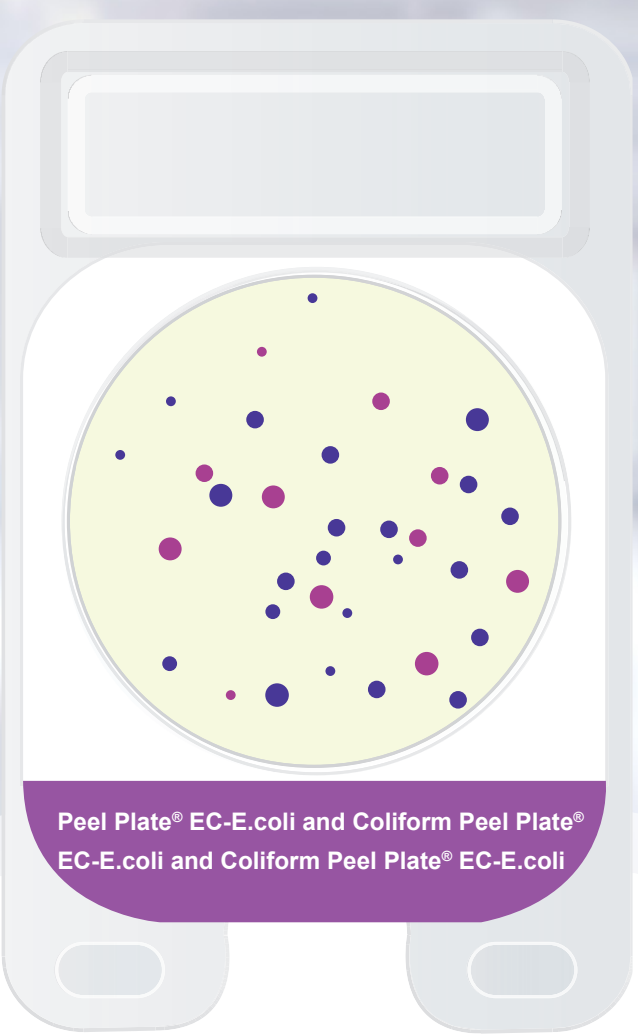
Peel Plate® EC
E.COLI AND COLIFORM



Interpretation Guide

An introduction to using and interpreting results for Peel Plate® EC Microbial Tests.

CHARM SCIENCES INC
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Introduction

The Peel Plate EC Microbial Tests diffuse the sample in media that contains selective agents and dyes designed for the determination of total coliform in dairy when incubated at 32 °C. When incubated at 35 °C, the method will distinguish *E. coli* from other coliform through color; *E. coli* are blue/purple colonies while coliform are red.

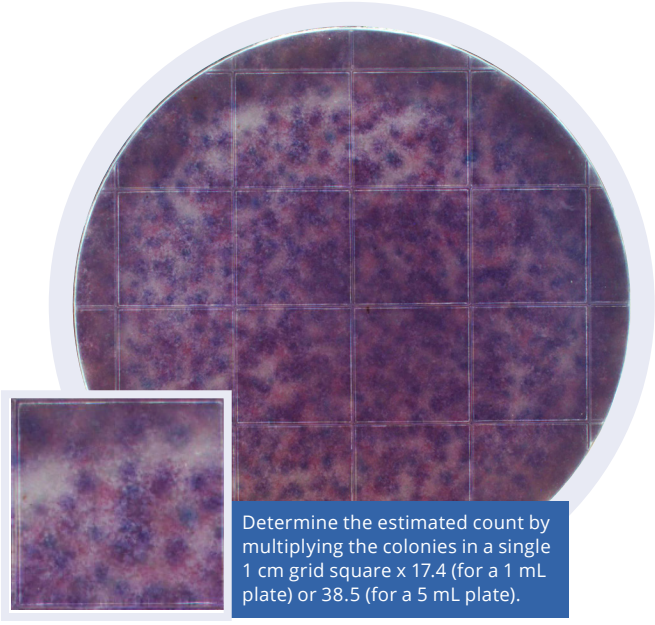
Since coliforms ferment lactose, they have the ability to break down the enzyme substrate, salmon-gal, through the production of β-galactosidase, producing a red color. *E. coli* produce β-glucuronidase which acts on x-glucuronide resulting in a blue colony.

- **Sensitivity:** >1 CFU/mL of test sample
- **Accurate quantitative range:** 1 to 154 CFU/mL
- **Incubation**: 24 ± 2 hours at 35 °C +/- 1° (32°C for dairy products)

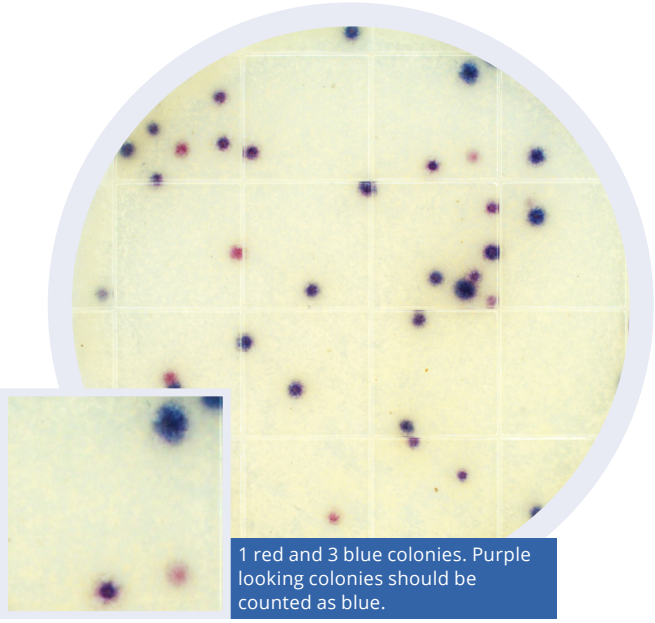
What You Can Expect to See

Depending on the matrix and product contaminants, colonies may be expressed differently.

0 Colonies (No Growth)

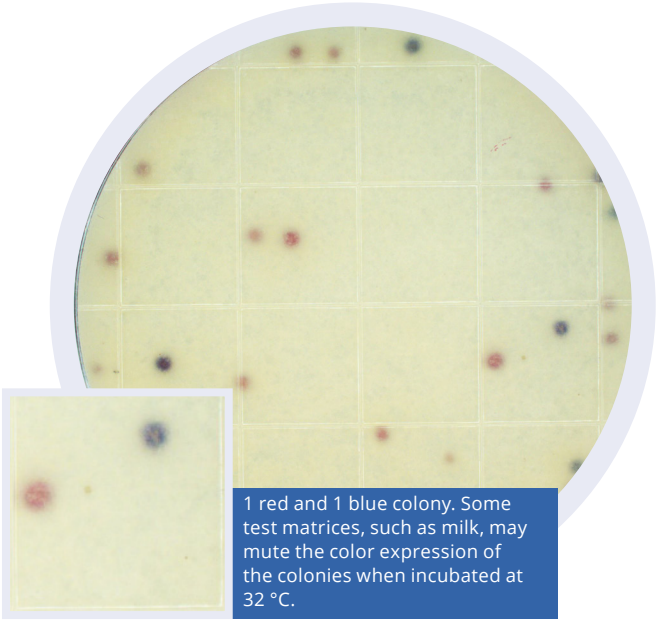


TNTC (Too Numerous to Count)



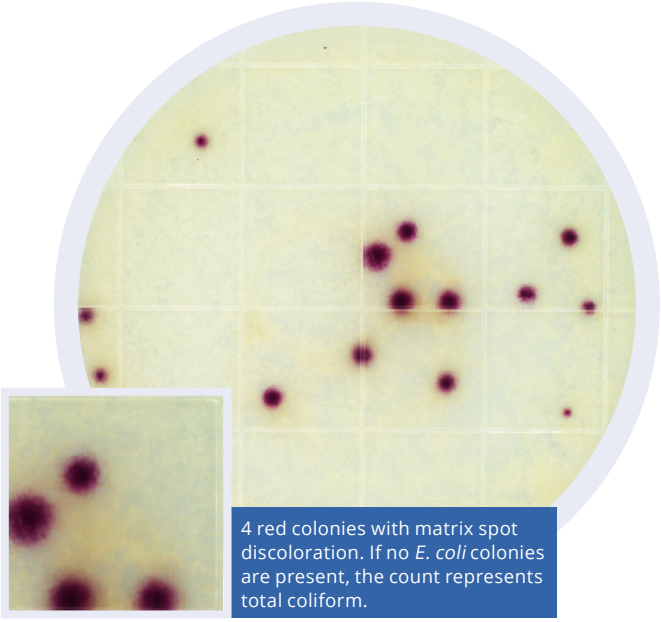
1 red and 3 blue colonies. Purple looking colonies should be counted as blue.

34 Colonies; 27 Blue and 7 Red (Water)



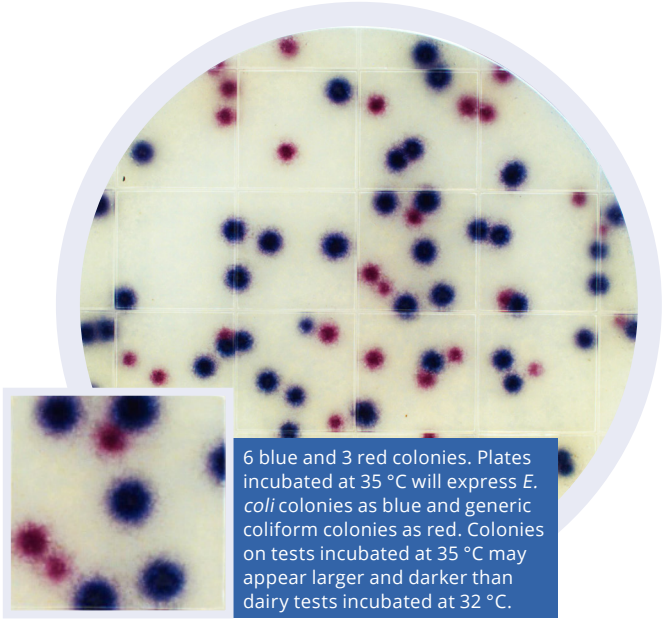
1 red and 1 blue colony. Some test matrices, such as milk, may mute the color expression of the colonies when incubated at 32 °C.

20 Colonies; 6 Blue and 14 Red (Milk)



4 red colonies with matrix spot discoloration. If no *E. coli* colonies are present, the count represents total coliform.

14 Colonies; 0 Blue and 14 Red (Grain)

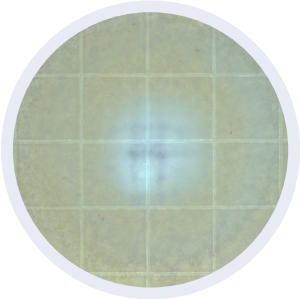


6 blue and 3 red colonies. Plates incubated at 35 °C will express *E. coli* colonies as blue and generic coliform colonies as red. Colonies on tests incubated at 35 °C may appear larger and darker than dairy tests incubated at 32 °C.

65 Colonies; 40 Blue and 25 Red (Buffer)

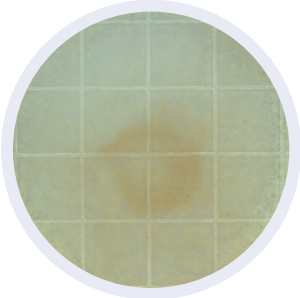
General Troubleshooting

Craters or Incomplete Wicking



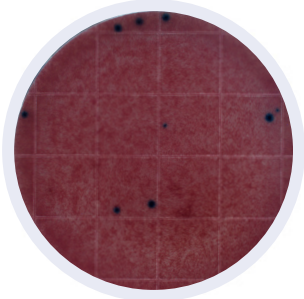
Craters are formed when the sample is dispensed too slowly or the pipette is held too far away from the media. Samples should be dispensed within 2-3 seconds and the pipette should be held held 1-2 cm above the media. Although incomplete wicking does not effect counts, best practice is to make sure the sample wicks evenly across the plate. If sample is too viscous to wick completely, additional dilution of the sample may be required or assist the wicking by lifting and rocking the plate. For more information on wicking, please contact Charm Technical Services.

Matrix Pattern on Tests



Some colloidal matrices like chocolate milk, or tomato paste, may have their particulates filter and concentrate at the site of sample delivery to the plate. This is most frequently observed with dilution pipets that inadequately mix sample during dilution. While matrix pattern does not affect the bacterial growth of plates, it can cause some interpretation questions. Matrix patterning may be reduced with mixing samples thoroughly before applying to test. Fruit and vegetable pulp that contain color may be mistaken as growth if not marked before incubation.

Background Color Interference



Some cultured dairy products like yogurt, cottage cheese, cheese and sour cream have cultures and enzymes that will produce a red background, obscuring growth of red colonies. Use a specially formulated Peel Plate EC Microbial Test for Cultured Dairy to reduce the red background. In this picture, blue colonies show but red are obscured.

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