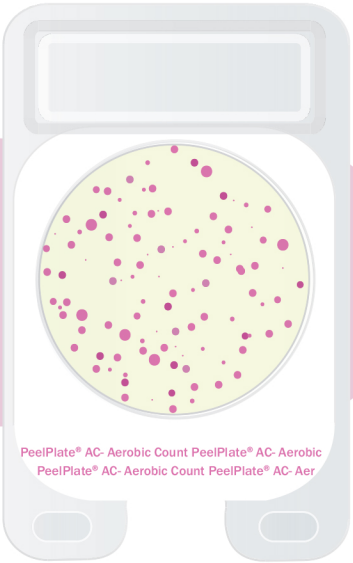
CHARM SCIENCES INC

NOTHING WORKS LIKE A CHARM

WEBER SCIENTIFIC



PeelPlate® AC
AEROBIC COUNT

INTERPRETATION GUIDE

FOR DETECTION AND ENUMERATION OF AEROBIC BACTERIA

INTRODUCTION

The Peel Plate® AC (Aerobic Count) test is a prepared culture method used for the detection and enumeration of aerobic (oxygen consuming) bacteria. The AC plate is used to test matrices that are usually pour- or spread-plated on Standard Methods Agar. These include foods, dairy, water, air, carcass swabs, and environmental samples. The red colored colonies are easily counted against the white background of the test plate.

The countable range of the Peel Plate AC test and other reference methods is 25 to 250 CFU/plate. That means that if a result is outside the countable range, the next higher or lower 1:10 serial dilution should be used to determine the colony forming count in a sample.

EXAMPLES OF WHAT PLATES LOOK LIKE

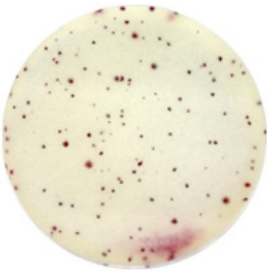
1

No Growth, zero colonies: Peel Plate test remains white to off-white color.

2

Count equals 11 colonies: Peel Plate AC tests with a low estimate of colonies.

3



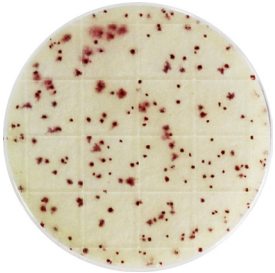
Count equals 134 colonies: Ideal counting range between 25 to 250 colonies on Peel Plate AC test.

4

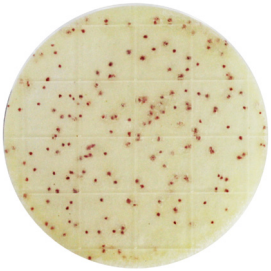
Count equals TNTC: Peel Plate AC test with Too Numerous To Count (TNTC) colonies.

5

DARKER/LARGER COLONIES

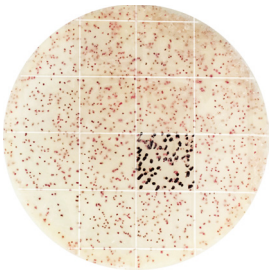


MUTED/SMALLER COLONIES



These pictures are examples of a a spiked bacterial count from both buffer at 35 °C and milk at 32 °C. Milk at 32 °C may mute colors and sizes of colonies. The Peel Plate AC test has been tested and compared to other reference methods such as standard plate agar and microbial test films and found to give equivalent results.

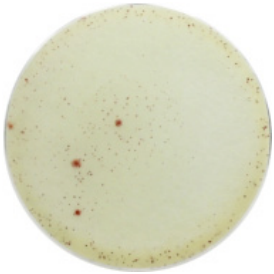
6



Shown in Picture 6 are TNTC results. To estimate the number of bacteria, count 1 square cm of a representative growth, or determine the average of 5 squares, and multiply by 17.4 for the estimated colony forming unit (eCFU/plate). This plate contains 89 colonies in 1 cm square which calculates to an estimated 1550 CFU/plate = 89 x 17.4.

TECHNIQUES AND TROUBLESHOOTING

1



Count TNTC: Some plates may have many colonies in an irregular distribution such as growth around the plate perimeter. Plates like these are also considered TNTC.

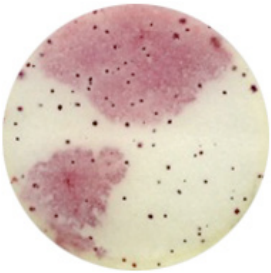
2

Incomplete wick: The sample may not diffuse completely to the edge if not pipetting vertically to center, or not expelling sample quickly. **Incomplete wick does not affect the final count.**

3

'Cratering' occurs when the sample is pipetted too slowly onto a Peel Plate test. This does not affect the final count.

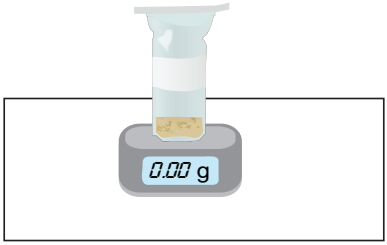
4



Count equals 75: Types of some motile or gel liquefying bacteria have the ability to spread through the Peel Plate test surface. These are called spreaders. The pink area is counted as one colony, and each dark spot inside the spread colonies are also counted.

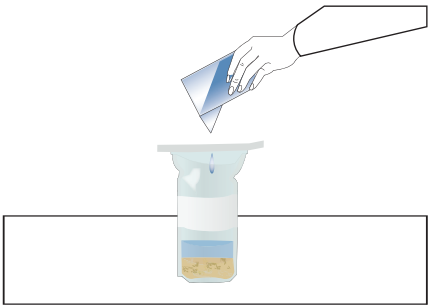
SAMPLE PREPARATION

1



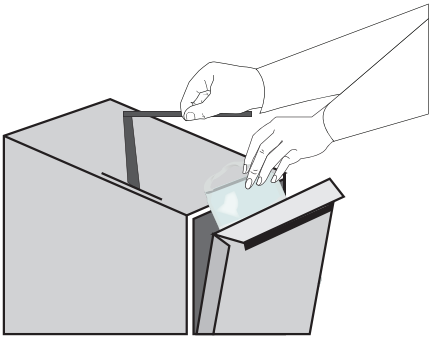
Prepare a dilution of food product.* Weigh or pipette food product into an appropriate container such as a stomacher bag, dilution bottle, Whirl-Pak® bag, or other sterile containers. Use sterile bags, sponge (as required) and gloves in handling sponges (if applicable). Avoid bare hand contact with the sponge and inside of the bag.

2



Dilute sample with preferred sterile diluent. Avoid using buffers with dyes or inhibitory additives unless otherwise directed by the Operator's Manual.

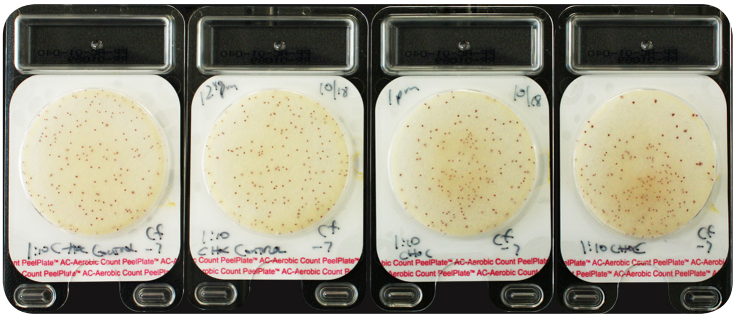
3



Homogenize sample following customer's established procedure or FDA-BAM, which is typically 50 g product into 450 mL buffer or 11 g to 99 mL buffer procedure. The sample is now ready to plate. PH adjustment should not be necessary except with undiluted acidic buffered products like fresh raw citrus juices. If there is a question on pH, a plate may be rehydrated with product and tested with pH paper to verify pH in the 6.5 to 7.2 range.

SAMPLE PREPARATION CONTINUED

4



This photo shows plates of chocolate milk samples pipetted from both a serological pipettor (left 2 photos) as a Control, and a dilution pipettor (right 2 photos). **Recovery of bacteria is the same by both methods.** Because chocolate is viscous and does not mix with the buffer in the pipet tip, the two dilution pipet plates on the right appear more heterogeneous than the conventional dilution control plates on the left. The chocolate matrix colloidal solids are concentrated in the center to create a bulls-eye appearance.

STORAGE

1

A test kit contains multiple foil bags containing 50 Peel Plate AC tests and a color indicator desiccant. Store kits refrigerated* in supplied container for up to 12 months. Tests may be stored at room temperature for up to 1 month.

2

Open the bag and remove the number of plates needed for analysis. Reseal the bag using the zip closure to store unused tests. Perform testing in a clean and dry testing area at ambient temperature.

3

Plates held at room temperature for 1 hour or more will open more easily. Moisture, heat, or storage abused tests will discolor pink/red. Do not use discolored tests or tests from bags with pink/white desiccant indicator.

* Refrigeration is defined as 0 to 7 °C or 0 to 4.5 °C for US certified labs

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