Nitrifying Bacteria

SELF-TESTING INSTRUCTIONS

1. PLAN AHEAD

Do not start until you are certain you can check the reaction 5 days after sampling. Nitrifying bacteria is detected by the presence of nitrite in the vial after day 5 of incubation.

For best interpretation of all possible reactions, we strongly urge you to take photos each day and upload them to the "Self-Tests" section of your Report:

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2. COLLECT SAMPLE

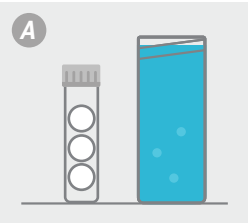
A. Remove the inner tube and fill outer tube with water.

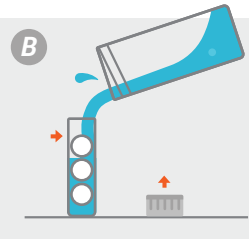
B. Remove cap from the inner tube, being careful to NOT let the inside of the lid contact any surfaces. Fill the inner tube to the fill line with water from the outer tube. Dispose of any remaining water.

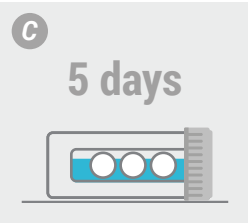
C. Screw inner cap back on tightly. Return to the outer tube and screw on outer cap.

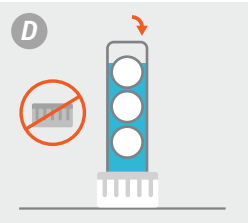
Set the tube on its side and allow it to incubate at room temperature for 5 days.

D. On day 5, remove the inner tube from the outer tube. Replace the inner tube's cap with the reactive cap (provided). Invert for 3 minutes.









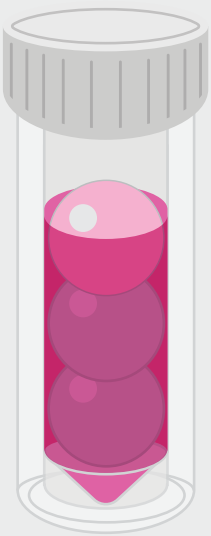
Do not touch inside of tubes or lids.

Keep sample at room temperature and away from direct sunlight.

Do not shake or swirl sample!

3. INTERPRETING RESULTS

After inverting the inner tube for 3 minutes, turn it upright and return to the outer tube. After 3 hours, compare results to the chart below.



If solution turns pink after 3 hours — nitrifying bacteria.

No changes — no nitrifying bacteria.

Nitrifying and denitrifying bacteria work against each other in the formation and destruction of nitrates in water. Be sure to complete *both* the nitrifying and denitrifying bacteria tests.

PP

Partial Pink on the Balls (PP)
Pink-red color on roughly half the ball.
Clear solution, but a pink-ish/red color on roughly half the ball – nitrification has just begun. The nitrite detected is in the biofilm on the balls. This means small population of nitrifiers (<100 nitrifiers/mL) associated with aerobic slime-forming bacteria.

RP

Red Deposits and Pink Solution (RP)
All balls are reddened, solution may be pale pink.
Light pink solution with red deposits over all three balls – nitrite is present in solution, as well as in the biofilm on the balls. This means moderate population of nitrifiers (>10,000 nitrifiers/mL).

DR

Dark Red Deposits and Solution (DR)
Balls and the solution is reddened.
Dark red solution with heavy, red deposits on the balls – high concentrations of nitrite. This suggests an aggressive level of nitrification has occurred with a dominant population of nitrifiers (>100,000 nitrifiers/mL).

4. RECORD CHANGES

Upload all reactions, photos, or changes to your Report:
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