

Total Phosphorus for DR2800

Ascorbic Acid Method (10210 Total)

DUE TO THE NECESSITY OF HEATING SAMPLES, START THIS TEST BEFORE OTHER TESTS.

PLEASE READ ALL INSTRUCTIONS BEFORE BEGINNING TESTS.
Wear gloves at this station.

1. Prepare heating blocks (DRB200)
 - a. Turn on both heating blocks (DRB200) with switch on back.
 - b. "Initializing" will appear.
 - c. "Start" will appear: Press the down arrow in the middle.
 - d. "Select block" will appear: Press the down arrow on the left.
 - e. "Select program" will appear: Press 100°C, Press 60', Press OK, Press Start on left.
 - f. "Start" will appear for right block: Press down arrow in the middle
 - g. Repeat steps in *d.* and *e.* above for the right block.



Step 1.

2. Mark every vial with the sample number using a sharpie on the glass above the barcode. **DO NOT** write on the barcode or the lid.
3. Unscrew the **teal DosiCap Zip cap** from the vial.
4. Using a clean pipet tip, carefully pipet **2.0 mL (2000µL) of sample** into the vial. (You will have to pipet **1000µl 2 times**).



Step 2 & 3.

5. Once you have a set of **15 vials** - Carefully remove the protective foil from the lid of a **teal DosiCap Zip vial**. Flip the teal DosiCap Zip cap over so that the reagent side faces the vial. Screw the cap tightly onto the vial.
6. **Shake** the capped vial **2-3 times** to dissolve the reagent in the cap.
 - Verify that the reagent has dissolved by looking down through the open end of the DosiCap Zip.



Step 5.

7. Make sure that “100°C” appears on the heating blocks. Once 15 vials are ready, insert them into a heating block (DRB200 Reactor). Close the protective cover.
- “Start” should appear under each heating block:
Press the button underneath the block with the inserted vials, this will start the 60 minute timer.



Step 7.

8. After the timer expires, carefully remove the **hot vial** from the reactor. Insert vial into a test tube rack and allow to cool to **room temperature** (15-25°C).
- The test tube rack with the hot vials can be put in the **fridge for ~15 min** to cool.
 - Press start again in order to keep the blocks heated and reset the timer.

9. Pipet **0.2 mL (200µL) of Reagent B** into cooled vial.
- **Acid be careful!**
 - Immediately close the Reagent B container.



Step 9.



Step 10.

10. Screw the **grey DosiCap C** onto the vial.

11. **Invert** the capped vial **2-3 times** to dissolve the reagent in the DosiCap.

12. After inversion, return vial to test tube rack and allow a **10-minute** reaction time.
- This can be timed by pressing **TIMER > DOWN ARROW > ENTER** on the spectrophotometer or a timer on the lab table can be used.

13. **FIND A LAB MANAGER** for the first measurement or if the machine turns off
- The machine must be calibrated with DI water for each lot # before any measurements are run.
- Turn on the spectrophotometer (DR2800) and press **Barcode Programs**. Place the **light shield** into the cell holder on the right.

14. When the timer expires, **invert** the vial **again 2-3 times**.

15. Wipe down the reaction vials with an alcohol swab and then a Kimwipe to **remove finger prints and liquid**.

16. Place reaction vial into the spectrophotometer (DR2800) cell holder on the left, align the vial barcode with the arrow, and **immediately cover** tightly with the cap!
- The sample will be read immediately. No zeroing is required. **Record the** value on the data sheet. Results are in mg/L PO₄. IF the machine reads: **Over Range**, put the sample aside to have it rerun in a High Range vial



Step 16.

17. When finished, throw pipet tips and DosiCap Zip caps away. Leave reaction vials capped and place in designated disposal bins. **Turn off heating blocks** (DRB200 Reactors).