

Total Chlorine (0 to 2.00 mg/L) For water, wastewater, and seawater

1. Enter the stored program number for total chlorine (Cl₂) powder pillows. Press: **PRGM**
2. Press: **9 ENTER**. The display will show **mg/L, Cl2** and the **ZERO** icon.
3. Fill a sample cell with 10 mL of sample (the Blank).
4. Place the blank into the cell holder. Tightly cover the sample cell with the instrument cap.
5. Press: **ZERO**. The cursor will move to the right, then the display will show: **0.00 mg/L Cl2**
6. Fill a second cell to the 10-mL mark with sample.
7. Add the contents of one DPD Total Chlorine Powder Pillow to the sample cell (the prepared sample). Cap and swirl the sample cell vigorously to dissolve the powder.
8. Press: **Timer Enter**. A three-minute reaction period will begin. Note: A pink color will develop if chlorine is present.
9. After the timer beeps, place the prepared sample into the cell holder. Tightly cover the sample cell with the instrument cap.
10. Press: **READ**. The cursor will move to the right, then the result in mg/L total Chlorine will be displayed.

Phosphate, Reactive (0 to 2.50 mg/L PO₄³⁻) For water, wastewater, and seawater

1. Enter the stored program number for reactive phosphorus, ascorbic acid method. Press: **PRGM**
2. Press: **79 ENTER**. The display will show **mg/L, PO4** and the **ZERO** icon.
3. Fill a sample cell with 10 mL of sample.
4. Add the contents of one PhosVer 3 Phosphate Powder Pillow for 10-mL sample to the cell (the prepared sample). Shake for 15 seconds. *Note: A blue color will form if phosphate present.*
5. Press: **TIMER ENTER**. A two-minute reaction period will begin. Perform Steps 6-8 during this period.
6. Fill another sample cell with 10 mL of sample (the blank).
7. Place the blank into the cell holder. Tightly cover the sample cell with the instrument cap. Press: **EXIT**.
8. Press: **ZERO**. The cursor will move to the right, then the display will show: **0.00 mg/L PO4**
9. After the timer beeps, place the prepared sample into the cell holder. Tightly cover the sample cell with the instrument cap.
10. Press: **READ**. The cursor will move to the right, then the result in mg/L phosphate (PO₄³⁻) will be displayed.

Nitrite, High Range (0 to 30.0 mg/L NO₃-N) For water and wastewater

1. Enter the stored program number for Test 'n' Tube nitrate nitrogen (NO₃-N).
Press: **PRGM**.
2. Press: **57 ENTER**. The display will show **mg/L, NO3-N** and the **ZERO** icon.
3. Insert the COD/TNT Adapter into the cell holder by rotating the adapter until it drops in to place. Then push down to fully insert it.
4. Remove the cap from a NitraVer X Reagent A vial and add 1 mL of sample (the Blank).
5. Cap the tube and invert 10 times to mix. *Note: to ensure accurate results, wait for sol'n to flow to the cap end. Pause. Return the vial to the upright position. Wait for the sol'n to flow to the vial bottom. This is one inversion. Invert 10 times.*
6. Clean the outside of the vial with a towel. *Note: Wiping with a damp towel, followed by a dry one, will remove fingerprints and other marks.*
7. Place the blank in the vial adapter with the Hach logo facing the front of the instrument. Push straight down on the top of the vial until it seats solidly into the adapter.

8. Cover the vial tightly with the instrument cap.
9. Press: **ZERO**. The cursor will move to the right, then the display will show: **0.0 mg/L NO3-N**.
10. Remove the vial from the instrument. Remove the cap from the vial.
11. Using a funnel, add the contents of one NitraVer X Reagent B Powder Pillow to the vial. Cap. Invert 10 times to mix (the prepared sample).
12. Press: **TIMER ENTER**. A five-minute reaction period will begin. Do not invert the vial again. *Note: A yellow color will develop if nitrogen is present.*
13. After the timer beeps, clean the outside of the vial with a damp towel, followed by a dry towel, to remove fingerprints and other marks.
14. Place the prepared sample in the adapter with the Hach logo facing the front of the instrument. Push straight down until the vial sits solidly in adapter.
15. Cover the vial tightly with the cap.
16. Press: **READ**. The cursor will move to the right, then the result in mg/L nitrate nitrogen (NO₃-N) will be displayed.

Nitrogen, Ammonia, Low Range Test 'N' Tube (0 to 2.50 mg/L NH₃-N)

1. Enter the stored program number for low range ammonia nitrogen- Test 'N' Tube.
Press: **PRGM**
2. Press: **66 ENTER**. The display will show **mg/L, NH₃-N** and the **ZERO** icon.
3. Insert the COD/TNT Adapter into the cell holder by rotating the adapter until it drops into place. The push down to fully insert it.
4. Remove the caps from 2 AmVer Diluent Reagent vials. Add 2 mL of sample to one vial (the sample). Add 2 mL of ammonia-free water to another (the blank)
5. Add the contents of one Ammonia Salicylate Reagent Powder Pillow for 5 mL sample to each vial.
6. Add the contents of one Ammonia Cyanurate Reagent Powder Pillow for 5 mL sample to each vial.
7. Cap the vials tightly and shake thoroughly to dissolve the powder. *Note: A green color will develop if ammonia is present.*
8. Press: **TIMER ENTER**. A 20-minute reaction period will begin.
9. Wipe the outside of the vials with a towel. After the timer beeps, place the blank into the adapter. Tightly cover the vial with the instrument cap.
10. Press: **ZERO**. The cursor will move to the right, then the display will show:
0.00 mg/L NH₃-N
11. Place the prepared sample in the adapter. Push straight down on the top of the vial until it seats solidly into the adapter.
12. Tightly cover the sample cell with the instrument cap. Press: **READ**. The cursor will move to the right, then the result in mg/L ammonia nitrogen will be displayed.