



# Free and Total Chlorine Test Kit

0–0.68, 0–3.4 and 0–10 mg/L Cl<sub>2</sub>

For test kit 2129000 (Model CN-80)

DOC326.98.00032

*Note: This product has not been evaluated to test for chlorine and chloramines in medical applications in the United States.*

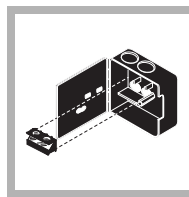
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## Test preparation

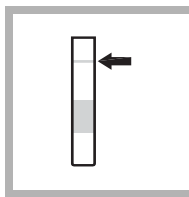
- Use sunlight or a fluorescent light source when matching colors with the color comparator.
- Rinse tubes, optical viewing insert and bottle with the sample water before testing. Reagent carryover from the total chlorine test will interfere with the free chlorine test. Rinse tubes, optical viewing insert and bottle with deionized water after testing.
- Failure to clean the tubes regularly can result in a film on viewing tubes or glassware. Clean with a soft cloth or brush and mild detergent followed by a deionized water rinse.
- To check reagent accuracy, use a standard solution in place of the sample (see Optional Items).
- Accuracy is not affected by undissolved powder.
- High concentrations of monochloramines will interfere with free chlorine test results.
- If low range chlorine results are off the high end of the scale, obtain a new sample and follow the high range test procedure.
- **Free chlorine, high range**—the high range test for free chlorine is only applicable to situations in which superchlorination has been practiced (e.g., filter startup/shutdown or flash mixing). Superchlorination is the practice of adding chlorine in the range of 10–20 mg/L, eliminating free chlorine test interferences. This test should not be used in nonsuperchlorinated situations due to interferences from combined chlorine species.
- If the disc gets wet, carefully open the plastic case. Dry the case and the color disc with a soft cloth. Assemble the case when the parts are completely dry.
- Read the result in mg/L. If the match is between two segments, use the middle value of the two segments.

**CAUTION: Handle chemical standards and reagents carefully. Review Material Safety Data Sheets before handling chemicals.**

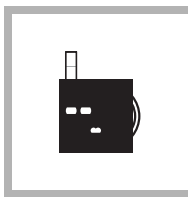
## Low range (0–0.68 mg/L) free or total chlorine test procedure



1. Insert the long path viewing adapter and the 0–3.4 mg/L color disc.



2. Fill a tube to the top line with sample.



3. Insert the tube in the left opening of the comparator.

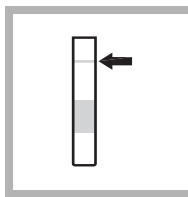


4. Fill the bottle to the 25-mL mark with sample.

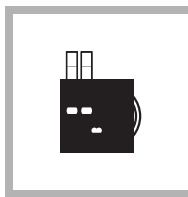


5. Add one DPD Free Chlorine powder pillow or one DPD Total Chlorine powder pillow. Swirl to mix.

*Note: If testing free chlorine, complete the test and read the result within one minute of adding the reagent.*



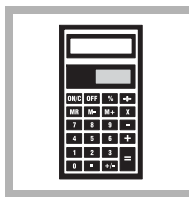
6. Fill another tube to the top line with the prepared sample.



7. Insert the second tube in the right opening of the comparator.

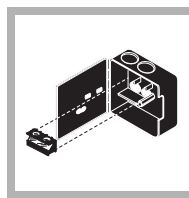


8. Hold the comparator so that the light source is directly above the tubes. Turn the color disc to find the color match.

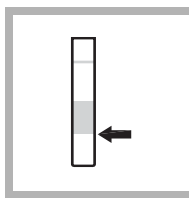


9. Divide the value in the scale window by 5 to obtain the mg/L free or total chlorine.

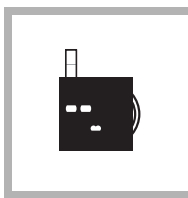
## Mid range (0–3.4 mg/L) free or total chlorine test procedure



1. Remove the long path viewing adapter. Insert the 0–3.4 mg/L color disc.



2. Fill a tube to the bottom line with sample.



3. Insert the tube in the left opening of the comparator.

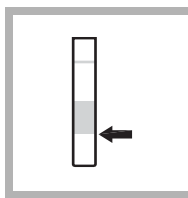


4. Fill the bottle to the 25-mL mark with sample.

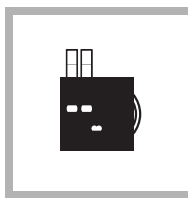


5. Add one DPD Free Chlorine powder pillow or one DPD Total Chlorine powder pillow. Swirl to mix.

*Note: If testing free chlorine, complete the test and read the result within one minute of adding the reagent.*



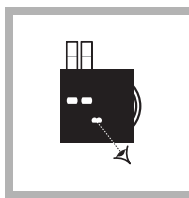
6. Fill another tube to the bottom line with the prepared sample.



7. Insert the second tube in the right opening of the color comparator.

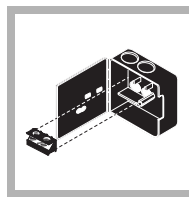


8. Hold the comparator so that the light source is directly behind the tubes. Turn the color disc to find the color match.

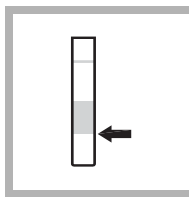


9. Read the result in mg/L. If the match is between two segments, use the middle value of the two segments.

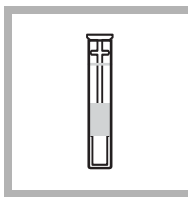
## High range (0–10 mg/L) free or total chlorine test procedure



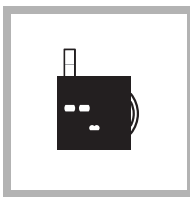
1. Remove the long path viewing adapter. Insert the 0–10 mg/L color disc.



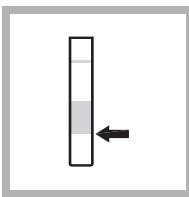
2. Fill a tube to the bottom line with sample.



3. Insert a viewing tube into the sample tube.

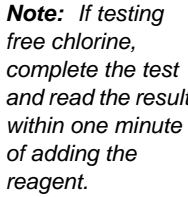


4. Insert the tube in the left opening of the comparator.



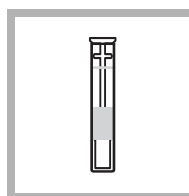
5. Fill another tube to the bottom line with the prepared sample.

*Note: If testing free chlorine, complete the test and read the result within one minute of adding the reagent.*

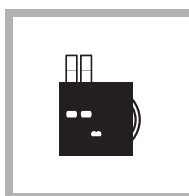


6. Add one DPD Free Chlorine powder pillow or one DPD Total Chlorine powder pillow. Swirl to mix.

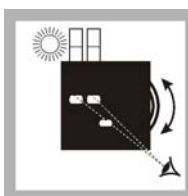
*Note: If testing total chlorine, read the test result after three minutes but before six minutes of adding the reagent.*



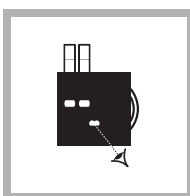
7. Insert a viewing tube into the sample tube.



8. Insert the second tube in the right opening of the comparator.



9. Hold the comparator so that the light source is directly behind the tubes. Turn the color disc to find the color match.



10. Read the result in mg/L. If the match is between two segments, use the middle value of the two segments.

## Replacement items

Description	Quantity	Catalog no.
Bottle, square w/ 25-mL mark	1	1704200
Color Comparator Box	1	173200
Color Disc, DPD Chlorine, 0–3.4 mg/L	1	990200
Color Disc, DPD Chlorine, 0–10 mg/L	1	9261600
Color Viewing Tube, plastic, with cap	4/pkg	4660004
DPD Free Chlorine Reagent Powder Pillows	100/pkg	1407099
DPD Total Chlorine Reagent Powder Pillows	100/pkg	1406499
Long Path Viewing Adapter	1	2412201
Viewing Tube Insert, optical	1	2128800

## Optional items

Description	Quantity	Catalog no.
Caps, for color viewing tubes 4660004	4/pkg	4660014
Chlorine Standard Solution, 50–75 mg/L, 2-mL PourRite™ ampule	20/pkg	1426820
Deionized Water	500 mL	27249
Detergent, Liqui-Nox	1	2088153
Test Tube Brush	1	69000