

Phenol Red Method (colorimeters only)

Method 10076

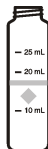
6.5 to 8.5 pH units

Scope and application: For water and wastewater

**Test preparation****Instrument-specific table**

The table in this section shows all of the instruments that have the program for this test. [Instrument specific information PP](#) shows sample cell and orientation requirements for reagent addition tests, such as powder pillow or bulk reagent tests.

Table 1 Instrument-specific information for reagent addition

Instrument	Sample cell orientation	Sample cell
DR 900	The orientation mark is toward the user.	2401906 

Before starting

Install the instrument cap on the DR 900 cell holder before ZERO or READ is pushed.

The sample temperature must be between 21–29 °C (70–84 °F) for accurate results.

Review the Safety Data Sheets (MSDS/SDS) for the chemicals that are used and use any recommended personal protective equipment.

Dispose of reacted solutions according to local, state and federal regulations. Use the Safety Data Sheets for disposal information for unused reagents. Consult the environmental, health and safety staff for your facility and/or local regulatory agencies for further disposal information.

Items to collect

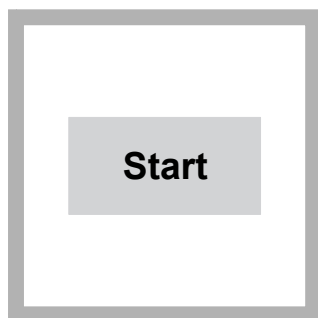
Description	Quantity
Phenol Red Indicator Solution, spec grade	1.0 mL
Dropper with 0.5 and 1.0 mL marks	1
Sample cells, with caps	2

Refer to [Consumables and replacement items](#) on page 3 for reorder information.

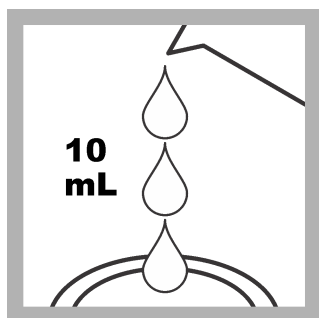
Sample collection

- Collect samples in clean glass or plastic bottles.
- Analyze the samples as soon as possible for best results.

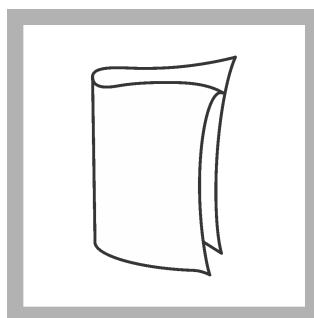
Colorimetric procedure



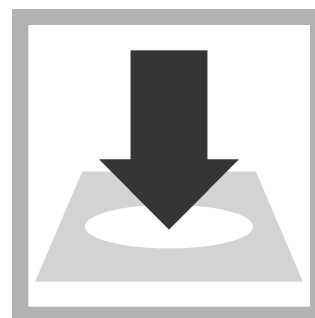
1. Start program **461 pH**.



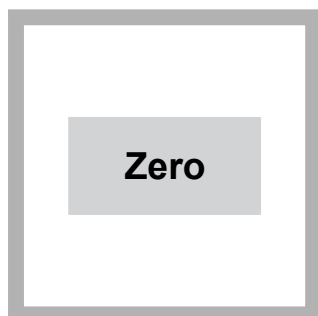
2. **Prepare the blank:** Fill the sample cell with 10 mL of sample.



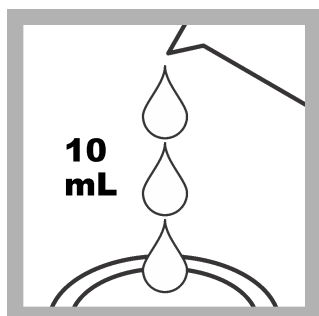
3. Clean the blank.



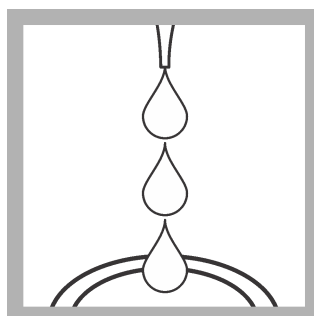
4. Insert the blank into the cell holder.



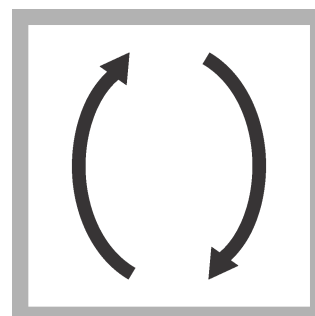
5. Push **ZERO**. The display shows 6.0 pH .



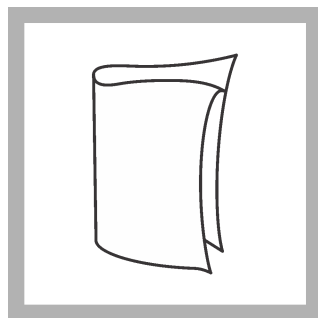
6. **Prepare the sample:** Fill a second sample cell with 10 mL of sample.



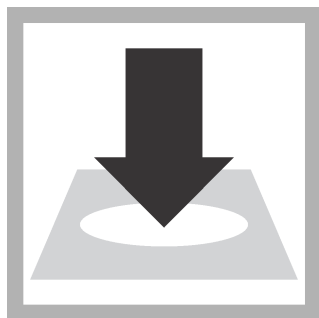
7. Use a dropper to add 1 mL of Phenol Red Indicator Solution to the prepared sample.



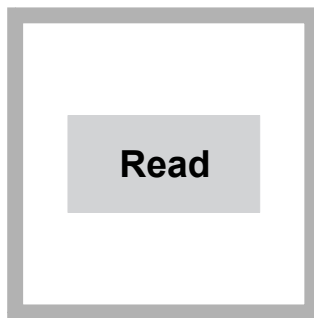
8. Close the prepared sample cell. Invert the prepared sample two times to mix.



9. Clean the prepared sample.



10. Insert the prepared sample into the cell holder.



11. Push **READ**. Results show in pH units.

Interferences

Chlorine does not interfere at levels of 6 mg/L Cl_2 or less. Salt water (seawater) interferes and cannot be analyzed with this method.

Accuracy check

Standard solution method

Use the standard solution method to validate the test procedure, reagents and instrument.

Items to collect:

- pH 7.0 buffer solution, clear
1. Use the test procedure to measure the concentration of the standard solution.
 2. Compare the expected result to the actual result.

Note: The factory calibration can be adjusted slightly with the standard adjust option so that the instrument shows the expected value of the standard solution. The adjusted calibration is then used for all test results. This adjustment can increase the test accuracy when there are slight variations in the reagents or instruments.

Method performance

The method performance data that follows was derived from laboratory tests that were measured on a spectrophotometer during ideal test conditions. Users may get different results under different test conditions.

Program	Standard	Precision (95% Confidence Interval)	Sensitivity Concentration change per 0.010 Abs change
461	pH 7.0 buffer solution	< 0.1 pH units	not applicable

Summary of method

This method uses a sulfonphthalein indicator (Phenol Red) to determine pH colorimetrically. Test results are measured at 520 nm. This method is available for colorimeters only.

Consumables and replacement items

Required reagents

Description	Quantity/test	Unit	Item no.
Phenol Red Indicator Solution, spec grade	1.0 mL	50 mL	2657512
Sample Cells, 10-20-25 mL, w/ cap	2	6/pkg	2401906

Required apparatus

Description	Quantity/test	Unit	Item no.
Dropper, measuring, 0.5 and 1.0 mL plastic	1	20/pkg	2124720

Optional reagents and apparatus

Description	Unit	Item no.
pH 7.0 Buffer Solution	500 mL	1222249
Thermometer, -20 to 110 °C, Non-Mercury	each	2635702



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