

HI96710

Free and Total Chlorine and pH Portable Photometer

- **CAL Check**
 - Allows for performance verification and calibration of the meter using NIST traceable standards
- **Auto-shut off**
- **Built-in timer**
 - Display of time remaining before a measurement is taken

The HI96710 portable photometer is for the measurement of pH, free chlorine, and total chlorine.

Significance of Use

Three critical parameters that can be tested to ensure good water quality are pH, free chlorine, and total chlorine. Chlorine is one of the most commonly used disinfectants for drinking water, wastewater, and water used for pools and spas. It can be added to in various forms including calcium hypochlorite, sodium hypochlorite, or in some instances, chlorine gas. When added to water, chlorine creates hypochlorous acid (HOCl) which dissociates into hypochlorite ion (OCl⁻).



hypochlorous acid ↔ hydrogen ion + hypochlorite ion

HOCl is the form of chlorine that acts as a stronger disinfectant as compared to OCl⁻. To ensure the added chlorine is effective at sanitizing, the pH of the water must be taken into account. Around pH 7.5, HOCl and OCl⁻ are present in relatively equal amounts. Below pH 7.5, the equilibrium shifts to favor HOCl; above pH 7.5, the equilibrium shifts to favor OCl⁻. Depending on the application, addition of chlorine is effective when added to water with a neutral or slightly acidic pH value.

When chlorine is first added to water, it is available as free chlorine. The measurement of free chlorine signifies the amount available for disinfection. Once chlorine begins to sanitize bacteria and pathogens present in the water, it becomes combined chlorine; combined chlorine is no longer available to act as a disinfectant. The measurement of total chlorine signifies the amount of free chlorine and combined chlorine. With both free and total chlorine measurements, a drinking water operator or pool owner can determine if there is enough chlorine available for disinfection.



Specifications

HI96710 Free and Total Chlorine and pH

Parameter Specifications		pH (P1)	Chlorine, Free (P2)	Chlorine, Total (P3)
	Range	6.5 to 8.5 pH	0.00 to 5.00 mg/L (ppm)	
	Resolution	0.1 pH	0.01 mg/L under 3.50 mg/L 0.10 mg/L above 3.50 mg/L	
	Accuracy @ 25°C (77°F)	±0.1 pH	±0.03 mg/L ±3% of reading	
Additional Specifications	Light Source	tungsten lamp		
	Light Detector	silicon photocell with narrow band interference filter @ 525 nm		
	Power Supply	9V battery		
	Auto-off	after ten minutes of non-use in measurement mode; after one hour of non-use in calibration mode; with last reading reminder		
	Environment	0 to 50°C (32 to 122°F); RH max 95% non-condensing		
	Dimensions	193 x 104 x 69 mm (7.6 x 4.1 x 2.7")		
	Weight	360 g (12.6 oz.)		
	Method	pH: phenol red method; Chlorine: adaptation of the EPA recommended DPD method		
Ordering Information	HI96710 is supplied with sample cuvettes (2) with caps, 9V battery, instrument quality certificate and instruction manual. CAL Check™ standards and testing reagents sold separately			
	HI96710C includes photometer, CAL Check™ standards, sample cuvettes (2) with caps, scissors, cuvette wiping cloth, 9V battery, instruction manual and rigid carrying case. Reagents sold separately			
Reagents and Standards	HI96701-11	CAL Check™ standard cuvettes (free Cl)	HI93710-03	Reagents for 300 tests (pH)
	HI93701-01	powder reagents for 100 tests (free Cl)	HI96711-11	CAL Check™ standard cuvettes (total Cl)
	HI93701-03	powder reagents for 300 tests (free Cl)	HI93711-01	Reagents for 100 tests (total Cl)
	HI96710-11	CAL Check™ standard cuvettes (pH)	HI93711-03	Reagents for 300 tests (total Cl)
	HI93710-01	reagents for 100 tests (pH)		