



## Professional pH Meter for Wine Analysis



3 important things you should know about wine pH measurement

### 1. Recognizing dirty pH electrodes

Most pH measurements in the process of making wine are made in the must. A pH electrode gets dirty very rapidly when measuring the pH of must, because sediments deposit on the pH measuring bulb and on the pH electrode junction.

This becomes a big problem during the actual pH measurement and even after, if the electrode has not been properly cleaned.

A dirty pH electrode can give inaccurate results that are up to 0.5 pH, even after a pH calibration has just been performed.

### 2. Knowing when to clean pH electrodes

Conventional pH meters do not warn the user when the pH electrode is dirty. A common example of this occurs when, just after calibrating the instruments, the pH electrode is immersed into the pH 7 buffer, and the reading is lower than expected (pH 6.8 or 6.9 instead of 7.0). HI 222 uses HANNA instruments' unique technology to detect when the electrode is dirty and give a warning during calibration.

### 3. Cleaning pH electrodes

It is of the utmost importance to properly clean the pH electrode prior to use. A proper cleaning of the electrode must be done with appropriate cleaning solutions, in order to remove all the deposits on the sensitive bulb and on the junction. HI 70635 (wine deposit removal) and HI 70636 (wine stain removal) are tailor made cleaning solutions for wine making.

### pH 3.00 Buffer: Tailor Made Calibration for Wine Analysis

HI 222 is the first bench pH meter that allows automatic pH calibration with pH 3 and pH 7 buffers.

Using the pH 3.00 buffer will minimize measurement errors due to calibration.



## HI 1048P - CPS™ Electrode for Wine Measurement

### CPS™ (Clogging Prevention System)

CPS (Clogging prevention system) is **HANNA** instruments' latest innovation in pH electrode technology.

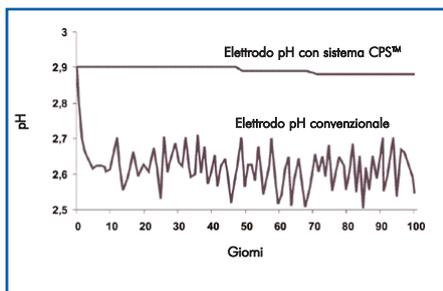
Conventional pH electrodes use ceramic junctions that clog quickly when used with wine. When the junction is clogged, the electrode does not function.

CPS™ technology utilizes the porousness of ground glass coupled with a Teflon® sleeve to prevent clogging of the junction. The ground glass allows proper flow of the liquid, while the Teflon sleeve repels dirt.

As a result of **HANNA** instruments' new CPS™ technology, pH electrodes stay fresh for up to 20 times longer than conventional electrodes.



Effects of dirty pH electrode junctions (conventional pH electrode) vs. CPS™ pH electrode.



After a few days conventional electrodes are already contaminated while the CPS™ pH electrode remains clean for over 100 days.

### Ordering Information

HI 222 is supplied complete with HI 1048P pH electrode, HI 7669/2W stainless steel temperature probe, HI 76404 electrode holder, pH 3 and pH 7 buffer sachets, cleaning solutions for removing wine stains and wine deposits, electrode refilling solution, 5 mL graduated syringe, 12 Vdc power adaptor and instructions.

### Specifications

		HI 222
Range	pH	-2.00 to 16.00
	mV	± 699.9 mV; ± 2000 mV
	Temperature	-20.0 to 120.0°C
Resolution	pH	0.01
	mV	0.1 (± 699.9 mV); 1 (± 2000 mV)
	Temperature	0.1°C
Accuracy	pH	± 0.01
	mV	± 0.2 (± 699.9 mV); ± 1 (± 2000 mV)
	Temperature	± 0.5°C
Calibration Check	status of electrode condition and response time, status of the buffer solutions during calibration	
pH Calibration	automatic, 1 or 2 point with 7 memorized buffer values (pH 1.68, <b>3.00</b> , 6.86, 7.01, 9.18, 10.01, 12.45)	
Temperature Compensation	manual or automatic, -20.0 to 120.0°C (-4 to 248°F)	
pH Electrode for Wine Analysis	HI 1048P glass body, BNC + pin (included)	
Temperature Probe	HI 7669/2W stainless steel probe (included)	
PC Connection	RS232 opto-isolated serial port	
Data Logging	100 samples	
Input Impedance	10 <sup>12</sup> Ohm	
Power Supply	12 Vdc adaptor (included)	
Environment	0 to 50°C (32 to 122°F); RH max 95%	
Dimensions	240 x 182 x 74 mm (9.4 x 7.2 x 2.9")	
Weight	1.1 kg (2.4 lb.)	

### Accessories

HI 1048P	Refillable pH electrode with glass body and 1 m (3.3') cable	HI 70635L	Cleaning solution for wine deposits, 500 mL bottle
HI 7669/2W	Temperature probe	HI 70636L	Cleaning solution for wine stains, 500 mL bottle
HI 5003	pH 3.00 buffer solution, 500 mL bottle	HI 7082	Electrolyte solution KCl 3.5M, 30 mL bottle, 4 pcs, for double junction electrodes
HI 7007L	pH 7.01 buffer solution, 500 mL bottle	HI 92000	Windows® compatible software
HI 70300L	Electrode storage solution, 500 mL bottle	HI 920010	Serial cable for PC connection