



HI 3811 Alkalinity Phenolphthalein and Total

Alkalinity is the quantitative capacity of a water sample to neutralize an acid to a set pH. This measurement is very important in determining the corrosive characteristics of water due primarily to hydroxide, carbonate and bicarbonate ions. Other sources of alkalinity can be from anions that can be hydrolyzed such as phosphates, silicates, borates, fluoride and salts of some organic acids. Alkalinity is critical in the treatment of drinking water, wastewater, boiler & cooling systems and soils.

Alkalinity Conversions

- 1 meq/L = 50 mg/L CaCO₃ = 2.8 dKH
- 1 mg/L CaCO₃ = 0.02 meq/L = 0.056 dKH
- 1 dKH = 0.36 meq/L = 17.86 mg/L CaCO₃

There are three methods of expressing alkalinity generally used:

- mg/L CaCO₃ = milligrams of CaCO₃ per liter water
- meq/L = milliequivalents per liter
- dKH = degrees of carbonate hardness

METHOD	RANGE*	SMALLEST INCREMENT	CHEMICAL METHOD	# TESTS	WEIGHT
HI 3811 Alkalinity (as CaCO₃) Phenolphthalein and Total					
titration	0-100 mg/L (ppm) 0-300 mg/L (ppm)	1 mg/L (ppm) 3 mg/L (ppm)	phenolphthalein/ bromphenol blue	110 avg.	460 g
HI 38014 Alkalinity Total					
titration	0-500 gpg	5 gpg	bromphenol blue	100	363 g
HI 38013 Alkalinity, Phenolphthalein and Total					
titration	0.0-10.0 gpg 0.0-20.0 gpg	0.1 gpg 0.2 gpg	phenolphthalein/ bromphenol blue	200	865 g

* 1 gpg = 17 ppm CaCO₃

HI 3811 Alkalinity Test Kit

The HANNA alkalinity test kit makes monitoring easy, quick and safe. The compact size gives the user the versatility to use the kit anywhere. The design makes the kit easy to handle and, except for alkalinity titrant, practically prevents accidental injury or damage due to spills.

Alkalinity can be measured as phenolphthalein alkalinity and total alkalinity. The phenolphthalein alkalinity is determined by neutralizing the sample to a pH of 8.3 using a dilute hydrochloric acid solution, and a phenolphthalein indicator. Since bicarbonate ions can be converted to carbonic acid with additional hydrochloric acid, the phenolphthalein alkalinity measures total hydroxide ions, but only half of the bicarbonate contribution.

HI 38013 Phenolphthalein and Total Alkalinity Test Kit

In this case the phenolphthalein alkalinity is determined by neutralizing the sample to a pH of 8.3 using a dilute sulfuric acid solution and a phenolphthalein indicator. Since bicarbonate ions can be converted to carbonic acid with additional sulfuric acid, the phenolphthalein alkalinity measures total hydroxide ions, but only half of the carbonate contribution.

HI 38014 Total Alkalinity Test Kit

Total alkalinity is determined by neutralizing the sample to a pH of 4.5 using a dilute sulfuric acid solution and a bromophenol blue indicator.

ORDERING INFORMATION

- HI 3811** test kit comes with 10 mL phenolphthalein indicator, 10 mL bromophenol blue indicator, 120 mL alkalinity titrant, 10 mL calibrated vessel, 50 mL calibrated vessel, and calibrated syringe with tip.
- HI 38013** test kit comes with 10 mL phenolphthalein indicator, 10 mL bromophenol blue indicator, 105 mL alkalinity reagent (2), 20 mL calibrated plastic vessel with cap and 1 mL syringe with tip.
- HI 38014** test kit comes with 10 mL bromophenol blue indicator, 110 mL total alkalinity reagent, 20 mL calibrated vessel with cap and 1 mL syringe with cap.

ACCESSORIES

- HI 3811**
- HI 3811-100** Spare reagent for 100 tests
- HI 38013**
- HI 38013-100** Spare reagent for 100 tests
- HI 38014**
- HI 38014-100** Spare reagent for 100 tests