

HI3820

## Acidity Test Kit

The HI3820 is a titration-based chemical test kit that determines the acidity concentration in two ranges: 0 to 100 mg/L and 0 to 500 mg/L CaCO<sub>3</sub>. The HI3820 is supplied with all of the necessary reagents and equipment to perform the analysis. The test kit contains enough reagents to perform approximately 110 tests.

- **Complete setup**
  - All required materials are included with the test kit, such as the sample beaker, indicator and reagent bottles, and calibrated syringe.
- **High resolution**
  - Readings from 0 to 100 mg/L are determined to 1 mg/L resolution.
  - Readings from 0 to 500 mg/L are determined to 5 mg/L resolution.
- **Replacement reagents available**
  - There is no need to buy a new kit when reagents are exhausted. The HI3820-100 can be ordered to replace the reagents supplied with the kit.

### Significance of Use

Acidity is the quantitative capacity of a water sample to neutralize a base to a predetermined pH value. Therefore, the greater acidity, the more potentially corrosive the water. Acidity can be caused by mineral acids, organic acids, and carbon dioxide in the form of carbonic acid. Today, our water supplies are becoming more contaminated with corrosive chemicals from industrial dumping and ever-growing amounts of carbon dioxide in the atmosphere. Acidity measurements are an essential monitoring device to define and control pollution in sewers, lakes, and rivers. Acidity of water is equally important to monitor in soils and fish farming to ensure an adequate growing environment.



Specifications	HI3820 Acidity (as CaCO <sub>3</sub> *)
Type	titration
Range	0-100 mg/L (ppm) 0-500 mg/L (ppm)
Smallest Increment	1 mg/L (ppm) 5 mg/L (ppm)
Method	methyl-orange/phenolphthalein
Number of Tests	110 avg.
<b>Ordering Information</b>	<b>HI3820</b> test kit comes with 10 mL dechlorinating reagent, 10 mL bromophenol blue indicator, 10 mL phenolphthalein indicator, 120 mL acidity titrant, 10 mL calibrated vessel, 50 mL calibrated vessel, and calibrated syringe with tip.
<b>Reagent</b>	<b>HI3820-100</b> Acidity (as CaCO <sub>3</sub> ), 110 tests avg

HI3811

## Alkalinity Test Kit

The HI3811 is a titration-based chemical test kit that determines the alkalinity concentration in samples within a 0 to 100 mg/L (ppm) CaCO<sub>3</sub> or 0 to 300 mg/L CaCO<sub>3</sub> range. The HI3811 is supplied with all of the necessary reagents and equipment to perform the analysis. The test kit contains enough reagents to perform approximately 110 tests.

- **Complete setup**
  - All required materials are included with the test kit, such as the sample beakers, plastic syringe, phenolphthalein indicator, and bromophenol blue indicator.
- **High resolution**
  - Readings from 0 to 100 mg/L are determined to 1 mg/L resolution
  - Readings from 0 to 300 mg/L are determined to 3 mg/L resolution
- **Replacement reagents available**
  - There is no need to buy a new kit when reagents are exhausted. The HI3811-100 can be ordered to replace the reagents supplied with the kit

### Significance of Use

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 treatments of drinking water, wastewater, boiler and cooling systems, and soils.

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. This process converts hydroxide ions to water, and carbonate ions to bicarbonate ions:



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. To completely convert the carbonate ions, hydrochloric acid is added until the sample pH is 4.5, which is known as Total Alkalinity:



Specifications	HI3811 Alkalinity (as CaCO <sub>3</sub> *)
Type	titration
Range	0-100 mg/L (ppm) 0-300 mg/L (ppm)
Smallest Increment	1 mg/L (ppm) 3 mg/L (ppm)
Method	phenolphthalein/bromophenol blue
Number of Tests	110 avg.
<b>Ordering Information</b>	<b>HI3811</b> 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.
<b>Reagent</b>	<b>HI3811-100</b> Alkalinity (as CaCO <sub>3</sub> ), 110 tests avg

\* 1 gpg = 17 ppm CaCO<sub>3</sub>