HI3844

Hydrogen Peroxide Test Kit

The HI3844 is a titration-based chemical test kit that determines the hydrogen peroxide concentration in two ranges: 0.00 to 2.00 mg/L and 0.0 to 10.0 mg/L. The HI3844 is supplied with all of the necessary reagents and equipment to perform the analysis. The test kit contains enough reagents for perform approximately 100 tests.

- Complete setup
  - All required materials are included with the test kit, such as the sample beaker, indicator and reagent bottles, spoon, and plastic pipettes.
- High resolution
  - Readings from 0.00 to 2.00 mg/L are determined to 0.25 mg/L resolution.
  - Readings from 0.0 to 10.0 mg/L are determined to 1.0 mg/L resolution.
- Replacement reagents available
  - There is no need to buy a new kit when reagents are exhausted. The HI3844-100 can be ordered to replace the reagents supplied with the kit.

Significance of Use

Hydrogen peroxide (H_2O_2) is widely used as a disinfectant and as a bleach for textiles, wood pulp, and hair, just to name a few. It is also used as a substitute for chlorine in water and sewage treatment. Most common commercial forms are aqueous solutions containing about 6, 12 and 30% hydrogen peroxide and are referred to as "20-volume," "40-volume," and "100-volume" respectively, referring to the value of oxygen liberated when the solution is boiled. The Hanna test kit can quickly and easily determine concentration in water up to 10 mg/L of hydrogen peroxide. This is due to the fact that it is not affected by stabilizers, which are sometimes added to commercial hydrogen peroxide solutions.

In the HI3844 test kit, hydrogen peroxide reacts slowly with iodide in acid solution (Step 1); thus a 15 minute interval is required to allow the reaction to occur completely. The amount of iodine generated is equivalent to the hydrogen peroxide in the sample. The liberated iodine is then titrated with standard sodium thiosulfate solution that reduces the iodine back to iodide ions (Step 2).

Step 1: $H_2O_2 + 2H^+ + 2I^- \rightarrow I_2 + 2H_2O$

Step 2: $I_2 + 2(S_2O_3)^{2-} \rightarrow 2I^- + (S_4O_6)^{2-}$

Specifications	HI3844 Hydrogen Peroxide (as H_2O_2)
Type	titration
Range	0.00-2.00 mg/L (ppm) 0.0-10.0 mg/L (ppm)
Smallest Increment	0.25 mg/L (ppm) 1.0 mg/L (ppm)
Method	iodometric
Number of Tests	100 avg.
Ordering Information	**HI3844** test kit comes with 100 mL hydrogen peroxide reagent A, 17 g hydrogen peroxide reagent B, 30 mL hydrogen peroxide reagent C, 25 mL hydrogen peroxide reagent D, graduated plastic test tube with cap, 50 mL calibrated plastic vessel, 3 mL plastic pipette, 1 mL plastic pipette and plastic spoon.
Reagent	**HI3844-100** hydrogen peroxide, 100 tests avg.

HI3843

Bleach Test Kit

The HI3843 is a titration-based chemical test kit that determines the hypochlorite concentration within the 50 to 150 g/L Cl_2 range. The HI3843 is supplied with all of the necessary reagents and equipment to perform the analysis. The test kit contains enough reagents for perform approximately 100 tests.

- Complete setup
  - All required materials are included with the test kit, such as the Erlenmeyer flask, indicator and reagent bottles and packets, and plastic pipettes.
- High resolution
  - Readings from 50 to 150 g/L are determined to 5 g/L resolution.
- Replacement reagents available
  - There is no need to buy a new kit when reagents are exhausted. The HI3843-100 can be ordered to replace the reagents supplied with the kit.

Significance of Use

Hypochlorites are common bleaching agents used to whiten textiles and paper and to disinfect solutions. Sodium hypochlorite solution has been traditionally used for the treatment of pool water since it is an inexpensive and readily available form of chlorine. The solution usually contains 10 to 15% available chlorine (equivalent to 100 to 150 g/L), but it rapidly loses its strength during storage. In addition, since it is greatly affected by heat, light, pH, and heavy metals, it needs to be monitored regularly.

An iodometric titration method is used in the HI3843 test kit. The hypochlorite solution is treated with potassium iodide and strongly acidified with acid (Step 1). The amount of iodine generated is equivalent to the chlorine in the sample. The concentration of iodine is then calculated by titration of thiosulfate ions that reduce the iodine back to iodide ions (Step 2).

Step 1: $OCl^- + 2H^+ + 2I^- \rightarrow Cl^- + I_2 + H_2O$

Step 2: $I_2 + 2(S_2O_3)2^- \rightarrow 2I^- + (S_4O_6)^{2-}$

Specifications	HI3843 Hypochlorite (as Cl_2)
Type	titration
Range	50-150 g/L (ppt)
Smallest Increment	5 g/L (ppt)
Method	iodometric
Number of Tests	100 avg.
Ordering Information	**HI3843** test kit comes with 30 mL potassium iodide solution, 100 packets bleach reagent B, 60 mL bleach reagent C (2), 125 mL glass Erlenmeyer flask and 1 mL plastic pipettes (25).
Reagent	**HI3843-100** hypochlorite (bleach), 100 tests avg.

* 1 ppg = 17 ppm $CaCO_3$