

## HI 3843 Bleach Test Kit



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Dear Customer,

Thank you for choosing a Hanna Product.

Please read the instructions carefully before using the chemical test kit. It will provide you with the necessary information for correct use of the kit.

Remove the chemical test kit from the packing material and examine it carefully to make sure that no damage has occurred during shipping. If there is any noticeable damage, notify your Dealer or the nearest Hanna office immediately.

Each kit is supplied with:

- Potassium Iodide Solution, 1 bottle with dropper (30 mL);
- HI 3843B-0 Bleach Reagent, packets (100 pcs);
- HI 3843C-0 Bleach Reagent, 2 bottles with dropper (60 mL);
- 1 glass Erlenmeyer flask (125 mL);
- 25 plastic pipettes (1 mL).

**Note:** Any damaged or defective item must be returned in its original packing materials.

### Specifications

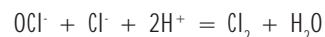
Range	50 to 150 g/L as Chlorine (Cl <sub>2</sub> )
Smallest Increment	5 g/L (0.5%) as Chlorine (Cl <sub>2</sub> )
Analysis Method	Iodometric method- Titration
Sample Size	1 mL
Number of Tests	100 (average)
Case Dimensions	235x175x115 mm (9.2x6.9x4.5")
Shipping Weight	485 g (17.1 oz.)

### Significance and Use

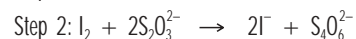
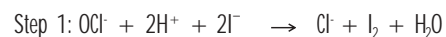
Hypochlorites are common bleaching agents to whiten textile or paper and to disinfect solutions. Sodium hypochlorite solution has been traditionally used for the treatment of pool water, since it is an inexpensive and readily available form of chlorine. The solution usually contains 10 to 15 per cent 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.

### Chemical Reaction

The available chlorine refers to the chlorine liberated by the action of dilute acid on the hypochlorite:



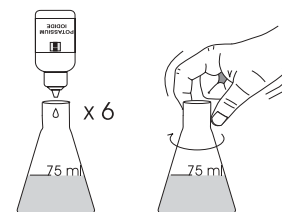
An iodometric titration method is used in this test kit. The hypochlorite solution is treated with potassium iodide and strongly acidified with acid (Step 1). The amount of iodine generated is equivalent to the chlorine in the sample. The concentration of iodine is then calculated by titration of thiosulfate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



### Instructions

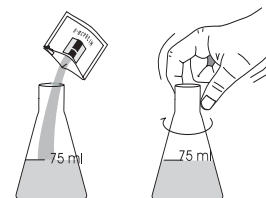
READ THE ENTIRE INSTRUCTIONS BEFORE USING THE KIT

- Fill the Erlenmeyer flask with about 70-75 mL of tap water (the residual chlorine in the tap water will not affect the test).
- Add 6 drops of Potassium Iodide Solution and swirl gently to mix.



- Add 1 packet of HI 3843B-0 Bleach Reagent and swirl gently to dissolve. After adding this reagent to your sample and mixing, check the pH of the solution in the Erlenmeyer flask: the pH should always be below 3.

Otherwise, add packets of HI 3843B-0 reagent, one at a time, until the pH value drops below 3.

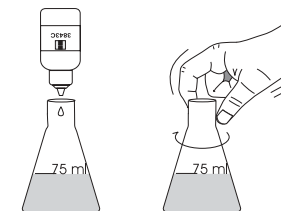


- Add 1 mL of your sample to the Erlenmeyer flask using the plastic pipette. Dispense the sample below the solution level in the flask. If hypochlorite is present, the solution will turn a dark orange color.



**Note:** Use the plastic pipettes for about 5 times each, rinsing them with tap water after every test. Discard when they become brittle and use a new one.

- Slowly add drops of HI 3843C-0 Bleach Reagent while swirling after each drop and counting the drops until the solution changes from yellow to colorless. Always hold the dropper vertically, swirling the titrated solution after each addition.



- To obtain the concentration in % of Chlorine in your sample, multiply by 0.5 the number of drops of the titration reagent HI3843C-0 used to turn the solution colorless.

$$\# \text{ of DROPS} * 0.5 = \% \text{ Chlorine}$$

- The result obtained can also be expressed in g/L by multiplying the % number by 10.

### Bibliography

Vogel's, Textbook of quantitative Chemical Analysis, 5<sup>th</sup> ed. Longman scientific & technical.

### Health and Safety data Sheets

The chemicals contained in this test kit may be hazardous if improperly handled. Read Health and Safety Data Sheets before performing the test.

