

## Instruction Manual

# HI 3831F Free Chlorine 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:

- 1 Color Comparator Cube;
- Reagent 1 (20 mL);
- Reagent 2 (20 mL).

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

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12/99  
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## SPECIFICATIONS

Range	0 to 2.5 mg/L (ppm) Chlorine
Smallest Increment	0.5 mg/L (ppm) Chlorine
Analysis Method	Colorimetric
Sample Size	5 mL
Number of Tests	50 (average)
Case Dimensions	220x145x55 mm (8.7x5.7x2.1")
Shipping Weight	176 g (6.6 oz.)

## SIGNIFICANCE AND USE

In pools and drinking water supplies, chlorination serves to kill or deactivate disease-producing microorganisms. It can also improve water quality by reacting with ammonia, iron, sulfide and some organic substances. However, an excessive concentration of chlorine in water can produce adverse conditions, such as formation of carcinogenic chloroform or other toxins. To maximize the purpose for chlorination and minimize any adverse effects, it is essential to monitor the chlorine levels closely.

The Hanna Chlorine Test Kit determines the Free chlorine concentration in water via a color cube. This makes the test kit practical for field use. No iodine or bromine can be present for this test to work properly.

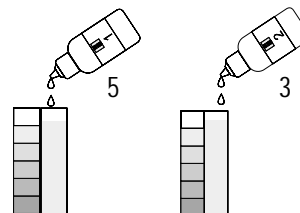
## CHEMICAL REACTION

The addition of chlorine to water produces hydrochloric and hypochlorous acids. The hypochlorous acid acts as the disinfectant and bleaching agent. These are known as free chlorine, which is measured by a colorimetric method. The reaction is buffered at approximately 6.3 pH; in that condition DPD (N-diethyl-p-phenylenediamine) is immediately oxidized by chlorine producing a reddish color. The color intensity of the solution determines the free chlorine concentration.

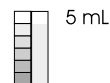
## INSTRUCTIONS

READ THE ENTIRE INSTRUCTIONS BEFORE USING THE KIT

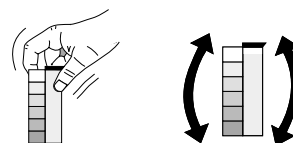
- Add 5 drops of Reagent 1 and 3 drops of Reagent 2 to the color comparator cube.



- Fill the color comparator cube with water sample to the 5 mL mark.



- Replace the cap and mix by carefully swirling the cube in tight circles and inverting it several times.



- Determine which color band best matches the solution in the vessel and record the results in mg/L (ppm) free chlorine.



## REFERENCES

Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1992, pages 445-446.

## HEALTH AND SAFETY

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