Instruction Manual

HI 3855
Cyanide
Test Kit

HANNA instruments

www.hannainst.com

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:

- HI 3855A-0 Cyanide Reagent, 1 bottle (17 g);
- HI 3855B-0 reagent, packets (100 pcs);
- HI 3855C-0 reagent, packets (100 pcs);
- 1 checker disc;
- 2 glass vials with caps;
- 1 plastic pipette (3 mL);
- 1 spoon.

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

ISTR3855 10/99 PRINTED IN ITALY

SPECIFICATIONS

Range	0 to 0.30 mg/L (ppm) as Cyanide
Smallest Increment	0.01 mg/L in the 0.00-0.15 range 0.05 mg/L in the 0.15-0.30 range
Analysis Method	Colorimetric
Sample Size	10 mL
Number of Tests	100
Case Dimensions	235x175x115 mm (9.2x6.9x4.5")
Shipping Weight	580 g (20.4 oz.)

SIGNIFICANCE AND USE

Cyanide refers to all of the CN groups in cyanide-compounds that can be determined as the cyanide ion CN^-. In most natural waters the molecular HCN form predominates. In solutions of metal cyanides, the CN group may also be present as a complex of varying stability.

Cyanides are extensively used for extraction of silver/gold ores, metal-cleaning and electroplating baths, coke ovens and other chemical processes. There are mainly two chemical treatments to remove cyanides from waste-waters: one is chlorination and the other is the alkaline method.

CAUTION: cyanides and their solutions liberate very toxic gases when in contact with acids!

Note: mg/L is equivalent to ppm (parts per million).

CHEMICAL REACTION

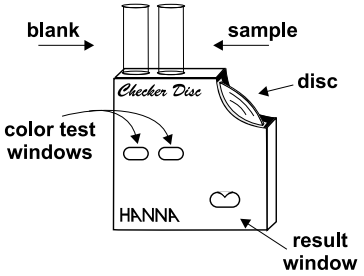
Cyanides react with the pyridine-pyrazolone reagent to form a blue complex in neutral buffered solution. The absorbance of this colored product is proportional to the concentration of cyanide present in the aqueous sample.

INSTRUCTIONS

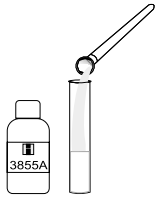
READ THE ENTIRE INSTRUCTIONS BEFORE USING THE KIT

Note: Temperature is a very important parameter for this test method. For best results the sample should have a temperature not exceeding 20°C.

- Using the plastic pipette, fill each glass vial with 10 mL of sample, up to the mark.
- Insert one of them into the left hand opening of the checker disc. This is the blank.

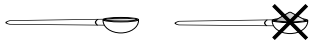


- Add to the other glass vial 1 level spoon of HI 3855A-0 Cyanide Reagent. Remember to close the reagent bottle immediately after use.

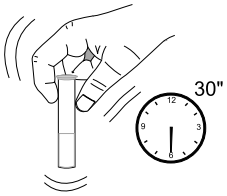


Note: Pay attention to the way the spoon is filled:

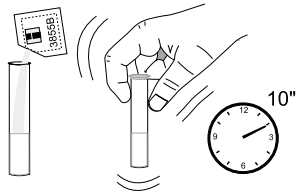
- do not overfill it;
- do not press the powder.



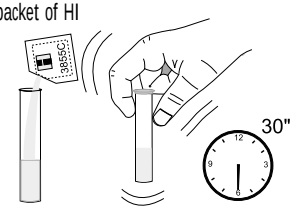
- Replace the cap immediately, to prevent the escape of chlorine gas which is developed during the reaction, and shake gently for 30 seconds.



- Wait for 30 seconds and add the content of one packet of HI 3855B-0 reagent. Replace the cap and shake gently for 10 seconds.



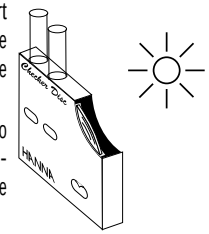
- Immediately add the content of one packet of HI 3855C-0 reagent, replace the cap and shake vigorously until the powder has completely dissolved. Keep the vial capped.



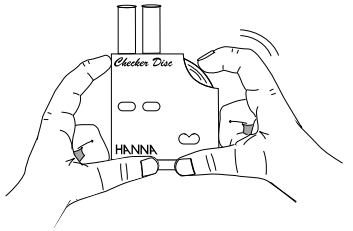
- Wait for 25 minutes to allow color to develop. This is the reacted sample.

Note: Shake the vial 4 or 5 times vigorously during the first 20 minutes of the reaction time. The result is not affected by undissolved reagent powder.

- Remove the cap and insert the reacted sample into the right hand opening of the checker disc.
- Hold the checker disc so that a light source illuminates the samples from the back windows.



- Rotate the disc while looking at the color test windows and stop when you find the color match. Read the value in the result window and record it in mg/L (or ppm) of Cyanide as CN^-.



For best results: Intensely colored samples will make the color matching determination difficult and they should be adequately treated before performing the test. Suspended matter in large amounts should be removed by prior filtration.

Oxidizing (like chlorine) or reducing agents (such as sulfide or sulfur dioxide) are known to interfere with the test. Distillation will remove these.

Samples with high pH values should be adjusted to approximately pH 7 before testing.

Caution: Ultraviolet radiation may cause fading of colors. When not in use, keep the disc protected from light, in a cool and dry place.

REFERENCES

Standard Methods for the Examination of Water and Wastewater, 18th edition, 1992

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.