

# Instruction Manual

## HI 3874 Nitrate Test Kit



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 3874-0 Nitrate Reagent, packets (100 pcs);
- 1 glass cuvet;
- 1 color comparator cube.

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

ISTR3874R2 02/07

### Specifications

Range	0 to 50 mg/L (ppm) as $\text{NO}_3^-$ -N
Smallest Increment	10 mg/L (ppm) $\text{NO}_3^-$ -N
Analysis Method	Colorimetric
Sample Size	10 mL
Number of Tests	100
Case Dimensions	230x59x70 mm (9.0x2.3x2.8")
Shipping Weight	156 g (6.0 oz.)

### Significance and Use

Nitrate ions are present in trace amounts in surface water and in higher levels in some groundwater. Nitrate is found only in small quantities in domestic wastewater but can reach higher concentration (up to 30 mg/L as nitrogen) in the outflow of nitrifying biological treatment plants. Excessive amounts can contribute to methaemoglobinemia: infant death and adult illness. In order to prevent this, a 10 mg/L limit (as nitrogen) has been imposed on drinking water.

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

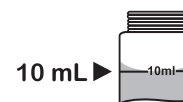
### Chemical Reaction

Nitrates are reduced to nitrites in the presence of Cadmium. The nitrites thus produced react with the reagent to yield an orange compound. The amount of color developed is proportional to the concentration of nitrate present in the aqueous sample.

### Instructions

READ THE ENTIRE INSTRUCTIONS BEFORE USING THE KIT

- Fill the glass cuvet with 10 mL of the sample, up to the mark.



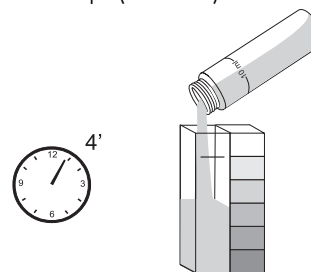
- Add 1 packet of HI 3874-0 Nitrate Reagent.



- Replace the cap and shake vigorously for exactly 1 minute. A deposit may remain, but it will not affect measurement. Time and manner of shaking can affect the results.



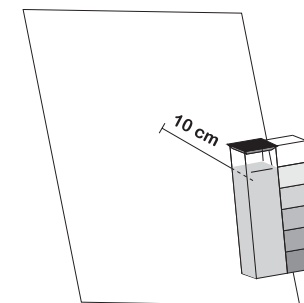
- Wait for 4 minutes to allow the color to develop. Remove the cap and fill the color comparator cube with 5 mL of the treated sample (to the mark).



- Determine which color matches the solution in the cube and record the result in mg/L (or ppm) of Nitrate-nitrogen.



- It is better to match the color with a white sheet at about 10 cm behind the comparator.



- To convert the reading to mg/L of Nitrate ( $\text{NO}_3^-$ ), multiply the reading by a factor of 4.43.

### References

Adaptation of the cadmium reduction method from Standard Methods for the Examination of Water and Wastewater, 20<sup>th</sup> Edition, 1998.

### Accessories

HI 3874-100 replacement kit (100 tests)  
HI 3874-99 color comparator cube for nitrate kit

### Safety Data Sheets

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