

# Nitrite, Dissolved Oxygen, Ozone



HI 3810 Dissolved Oxygen

**Nitrites** are intermediate oxidation state of nitrogen (in the oxidation of ammonia to nitrate or in the reduction of nitrate). Such oxidation/reduction may occur in wastewater of treatment plants and in natural waters during the biological decomposition of nitrogen-compounds. In small quantities it can cause methaemoglobinemia among infants.

Conversely, high levels are used to inhibit corrosion in cooling towers. Nitrosation reactions of nitrites can yield organic nitrosamines, which are known to be carcinogenic.

The concentration of **dissolved oxygen** in water is extremely important in nature as well in man's environment. In the oceans, lakes, rivers, and other surface water bodies, dissolved oxygen is essential to the growth and development of aquatic life. Without oxygen, the water can become toxic due to the anaerobic decaying of organic matter. In man's environment, water must contain at least 2 mg/L of oxygen to protect water pipes from corrosion. However, boiler system water, in many cases, cannot contain greater than 10 mg/L oxygen.

**Ozone** is an oxidizing agent and a germicide. It is used for oxidation of organic matter, which produces color or odor in drinking water.

METHOD	RANGE	SMALLEST INCREMENT	CHEMICAL METHOD	# TESTS	WEIGHT
<b>HI 3873 Nitrite (as NO<sub>2</sub><sup>-</sup>-N)</b>					
colorimetric	0.0-1.0 mg/L (ppm)	0.2 mg/L (ppm)	chromotropic acid	100	169 g
<b>HI 38051 Nitrite (as NO<sub>2</sub><sup>-</sup>-N)</b>					
checker disc	0.00-0.50 mg/L (ppm)	0.01 mg/L (ppm)	chromotropic acid	100	446 g
<b>HI 3810 Oxygen, Dissolved</b>					
titration	0.0-10.0 mg/L (ppm)	0.1 mg/L (ppm)	modified Winkler	110 avg.	910 g
<b>HI 38054 Ozone</b>					
checker disc	0.0-2.3 mg/L (ppm)	0.1 mg/L (ppm)	DPD	100	966 g

## HI 3873 Nitrite Test Kit

The HI 3873 HANNA test kit determines the nitrite concentration in water via color comparison cube.

Nitrites react with chromotropic acid reagent to form a pink tint in the sample. The amount of color developed is proportional to the concentration of nitrite present in the aqueous sample.

## HI 38051 Nitrite Test Kit

The HI 38051 HANNA test kit determines the nitrite concentration in water via checker disc.

## HI 3810 Dissolved Oxygen Test Kit

The HANNA dissolved oxygen portable test kit can determine the oxygen concentration in water quickly and easily. A modified Winkler method is used. Manganous ions react with oxygen in the presence of potassium hydroxide to form a manganese oxide precipitate. An azide is present to prevent any nitrite ions from interfering with the test. On addition of acid, manganese oxide hydroxide oxidizes the iodide to iodine. Since the amount of iodine generated is equivalent to the oxygen in the sample, the concentration of iodine is calculated by titration of thiosulfate ions that reduce the iodine back to iodide ions.

## HI 38054 Ozone Test Kit

The HANNA test kit for ozone determines the ozone concentration in water via checker disc. The reaction between ozone and the reagent causes a pink tint in the sample which is proportional to the ozone concentration.

## ORDERING INFORMATION

**HI 3873** test kit comes with 100 packets nitrite reagent, glass cuvette and color comparison cube.

**HI 38051** test kit comes with 100 packets nitrite reagent, glass vials with caps (2) and 3 mL plastic pipette.

**HI 3810** test kit comes with 30 mL manganous sulfate solution, 30 mL alkali-azide reagent, 60 mL sulfuric acid solution (2), 10 mL starch indicator, 120 mL titrant solution, glass bottle with stopper, 10 mL calibrated vessel and calibrated syringe with tip.

**HI 38054** test kit comes with 100 packets ozone reagent, 500 mL deionized water, checker disc, glass vials with caps (2) and 3 mL plastic pipette.

## ACCESSORIES

### HI 3873

**HI 3873-100** Spare reagent for 100 tests

### HI 38051

**HI 38051-100** Spare reagent for 100 tests

### HI 3810

**HI 3810-100** Spare reagent for 100 tests