

Dissolved Oxygen, Ozone, Phenols



HI 3810 - Dissolved Oxygen



HI 38054 - Ozone

Oxygen, Dissolved

Proper dissolved oxygen levels are essential for aquatic ecosystems. A dissolved oxygen level of 5 mg/L or greater will support healthy growth of most fish species. Other applications include monitoring in wastewater treatment and heating plants.

HANNA instruments[®] HI 3810 test kit uses an adaptation of the Winkler method to determine dissolved oxygen level.

Ozone

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

Ozone is being used more and more as an oxidizing agent because of its efficiency:

Oxidizing reagent	Oxidizing potential
Ozone	2.07
Hydrogen peroxide	1.77
Permanganate	1.67
Chlorine dioxide	1.57
Hypochlorite	1.49
Bromine	1.09
Iodine	0.54

Thanks to its oxidizing potential ozone has the advantage of reducing the time normally required for sterilization.

Ozone is dangerous for human health (depending on ozone concentration and time of exposure), and those plants that use this sterilizing agent (swimming pools, bottled water and drinking water), normally have to apply a process of de-ozonation, at the end of the sterilization process.

Ozone is also used in reverse-osmosis.

Phenols

Phenols are widely used in the chemical and pharmaceutical industries. They are also used as coloring agents, indicators and disinfectants. Phenols can be found both in industrial discharges and in natural waters. The presence of phenols in water, even in very low concentrations, can cause an unpleasant odor.

Parameter	Code	Method	Range*	Smallest Increment	Chemical Method	Number of Tests	Weight
Oxygen, dissolved	HI 3810	Titration	0.0-10.0 mg/L	0.1 mg/L	Modified Winkler	approx. 110	910 g
Ozone	HI 38054	Checker disc	0.0-2.3 mg/L	0.1 mg/L	DPD	100	966 g
Phenols	HI 3864	Checker disc	0.00-1.00 mg/L 0.5-5.0 mg/L	0.02 mg/L 0.1 mg/L	Aminoantipyrine	100	573 g

* 1 mg/L = 1 ppm

For spare reagents, see section V. For accessories, see section U.