

Technical Specification

Tests For: Low levels of Hydrogen Peroxide in water

Test Range: 0–2.0 mg/L

Reagent Chemistry Used: Catalysed DPD/ Iodide

Method Detection Limit*: 0.01 mg/L

Limit of Quantification **: 0.03 mg/L

*The Method Detection Limit (MDL) is defined as the minimum measured concentration of a substance that can be reported with 99% confidence to be different from the method blank results.ⁱ

**The Limit of Quantification (LOQ) is the smallest quantity that can be detected with reasonable certainty for a given analytical procedure.ⁱⁱ

Testing for Hydrogen Peroxide

Hydrogen peroxide is used in various water treatment processes. In such applications it is important to ensure that the hydrogen peroxide level is maintained within the correct range to ensure optimum operation of the water treatment process.

The Palintest Hydrogen Peroxide LR test provides a simple means of measuring Hydrogen Peroxide levels over the range 0–2.0 mg/L.

Reagent Chemistry

Hydrogen peroxide reacts with potassium iodide under slightly acid conditions, and in the presence of a catalyst, to release iodine into solution. The iodine then reacts with diethyl-p-phenylene diamine (DPD) to produce a pink coloration. In the Palintest method the reagents are combined in the form of a single tablet and the test is simply carried out by adding a tablet to a sample of the water.

The intensity of the colour produced is proportional to the hydrogen peroxide concentration and is measured using a Palintest Photometer.

Interferences

The sample should be free of other oxidising agents such as chlorine, bromine, etc, as these react in a similar manner and will interfere with the test. It is unlikely that these oxidising agents will be used in conjunction with hydrogen peroxide and, under normal circumstances, will not usually coexist in solution.

ⁱ EPA, Definition and Procedure for the Determination of the Method Detection Limit, Revision 2, Dec 2016.

ⁱⁱ IUPAC. *Compendium of Chemical Terminology, 2nd ed. (the "Gold Book")*.