

Bromine

Reagent set for the photometric determination of free and total bromine in drinking water, swimming pools and water reservoirs

Method:

Photometric determination of free and total bromine with photometers PF-3 or PF-12

At a pH value of 5 to 6, free bromine reacts with *N,N*-diethyl-1,4-phenylene diamine (DPD) and forms a red-violet dye. In the presence of iodide ions, the content of total bromine (free and combined bromine together) can be determined.

Measurement range:

0.10 – 13.00 mg/L Br₂

Contents:

sufficient for 200 tests

28 g Br₂-1

30 mL Br₂-2

1 measuring spoon 85 mm

1 plastic syringe 5 mL

1 instructions for use

Hazard warning:

This test does not contain any harmful substances which must be specially labeled as hazardous.

Procedure:

Requisite accessories: test tubes 14 mm ID (REF 91680)

a) Free bromine

1. Rinse test tube 14 mm ID several times with the sample (*the pH value of the sample must be between pH 4 and 8*) and fill with **5 mL sample**.
2. Place test tube in photometer as blank value and adjust for zero.
3. Add **1 level measuring spoon of Br₂-1**, close and **shake well for 20 s**.
4. Clean outside of test tube and measure after **1 min**.

b) Total bromine

5. Open test tube again, add **3 drops of Br₂-2**, close and mix.
6. Clean outside of test tube and measure after **2 min**.

c) Combined bromine

The content of combined bromine can be calculated as difference of total and free bromine.

Measurement:

see manual for photometer PF-3 or PF-12

After use, rinse out test tubes thoroughly and seal them.

The method can be applied also for the analysis of sea water.

Interferences:

The temperature of the water sample should be between 10 and 50 °C.

The determination of free bromine measures chlorine, bromamine, chloramine, iodine and, in part, chlorine dioxide as well. Higher manganese compounds simulate free bromine.

Bromine concentrations above 22 mg/L can bleach the red reaction colour (low results).

Rinse test tubes several times thoroughly. Residues of Br₂-2 can cause higher values for free bromine.

Conversion:

1.0 mg/L Br₂ \triangleq 1.4 mg/L BrO₂ \triangleq 1.2 mg/L BrO⁻ \triangleq 1.5 mg/L NaOBr \triangleq 0.4 mg/L Cl₂ \triangleq 1.6 mg/L I₂

Disposing of the samples:

The used analysis specimens can be flushed down the drain with tap water and channelled off to the local sewage treatment works.

Storage:

Store the test kit in a cool (< 25 °C) and dry place.