

REF 985095

en

Test 0-95

03.23

NANOCOLOR® ortho- and total Phosphate LR 1

Method:

Photometric determination as molybdenum blue after acidic hydrolyzes and oxidation at 100–120 °C
The test is equivalent to the EPA method 365.3.

Range:	0.05–0.50 mg/L P (PO ₄ -P) 0.2–1.5 mg/L PO ₄ ³⁻
Wavelength (HW = 5–12 nm):	690 nm/885 nm
Decomposition:	30 min at 120 °C or 60 min at 100 °C
Reaction time:	10 min (600 s) at 20–25 °C

Contents of reagent set:

- 20 test tubes total Phosphate LR 1
- 1 tube NANOFIX total Phosphate LR 1 R2
- 1 tube NANOFIX total Phosphate LR 1 R3
- 1 test tube with 5 mL total Phosphate LR 1 R4

Hazard warning:

Test tubes contain sulfuric acid 5–15 %, reagent R2 contains sodium peroxodisulfate 80–99 %, reagent R4 contains sulfuric acid 5–15 %.

H317, H334 May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

P261 sh, P280 sh, P342+311 Avoid breathing dust/ vapors. Wear protective gloves/eye protection. If experiencing respiratory symptoms: Call a POISON CENTER/ doctor. For further information ask for a safety data sheet.

Preliminary tests:

If the order of magnitude of the concentration in a sample is not known, a preliminary test with QUANTOFIX® Phosphate (3–100 mg/L PO₄³⁻, REF 91320) or VISOCOLOR® ECO Phosphate (0.2–5 mg/L PO₄-P, REF 931084) rapidly gives this information. From the order of magnitude the required dilution can be calculated and prepared directly.

Interferences:

Precipitations after hydrolysis can be removed by membrane filtration prior to the determination. If higher amounts of organic compounds and/or organic phosphorus compounds are present, use NANOCOLOR® NanOx Metal (REF 918978) for decomposition.

The following quantities of ions will not interfere: ≤ 2 mg/L As, NO₂⁻, S²⁻ (only ortho-P); ≤ 20 mg/L Fe, Cu, Cr; ≤ 100 mg/L Si, < 150 mg/L COD (reference to potassium hydrogen phthalate)

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

Procedure:

Requisite accessories: piston pipette with tips

total Phosphate

Open test tube, add

4.0 mL test sample (the pH value of the sample must be between pH 0 and 10) and

1 NANOFIX R2, screw cap back on to test tube, shake.

(Close NANOFIX tube immediately after use.)

Place tube in heating block and start heating block.

After 30/60 min remove test tube from heating block and allow to cool down to room temperature.

Add

1 NANOFIX R3 and

200 µL (= 0.2 mL) R4, mix.

Clean outside of test tube and measure after 10 min.

ortho Phosphate

Filter sample solution.

Open test tube, add

4.0 mL test sample (the pH value of the sample must be between pH 0 and 10),

1 NANOFIX R3 and

200 µL (= 0.2 mL) R4, screw cap back on to test tube, shake.

Clean outside of test tube and measure after 10 min.

Notes:

The concentration of condensed phosphates is the difference between total phosphate **without** Phosphate R2 and ortho phosphate.

Fast cooling of the cells / cuvettes under cold water can lead to clot formation by the NANOFIX capsules.

Measurement:

For MACHEREY-NAGEL photometers see manual, test 0-95.

Measurement when samples are colored or turbid:

For all NANOCOLOR® photometers see manual, use key for correction value.

Photometers of other manufacturers:

For other photometers check whether measurement of round glass tubes is possible. Verify factor for each type of instrument by measuring standard solutions.

Analytical quality control:

NANOCONTROL ortho Phosphate (REF 92576) or NANOCONTROL Multistandard Sewage outflow 2 (REF 925010)