REF 985081

en

Test 0-81 05.18

NANOCOLOR® ortho- and total Phosphate 5

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:	**0.20–5.00 mg/L P (PO_4-P)**	**0.5–15.0 mg/L PO_4^{3-}**
Wavelength (HW = 5–12 nm):	**690 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 5
1 tube *NANOFIX* total Phosphate 5 R2
1 tube *NANOFIX* total Phosphate 5 R3
1 test tube with 5 mL total Phosphate 5 R4

Hazard warning:
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.
P261sh, P280sh, 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:
In the order of magnitude of the concentration in a sample is not known, a preliminary test with QUANTOFIX® Phosphate (3–100 mg/L PO_4^{3-}, REF 91320) 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.
The following quantities of ions will not interfere:
≤ 5 mg/L As, NO_2^-, S^{2-} (only ortho-P); ≤ 50 mg/L Fe, Cu, Cr; ≤ 500 mg/L Si, < 750 mg/L COD (reference to potassium hydrogen phthalate).

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

Procedure:
Requisite accessories: piston pipette with tips

total Phosphate

Open test tube, add
1.0 mL test sample *(the pH value of the sample must be between pH 1 and 13)* 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
1.0 mL test sample *(the pH value of the sample must be between pH 1 and 13)*,
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.

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

Measurement:
For *NANOCOLOR*® photometers and PF-12 see manual, test 0-81.

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 Multistandard Sewage outflow 1 (REF 925011) or Sewage outflow 2 (REF 925010)

MACHEREY-NAGEL GmbH & Co. KG · Neumann-Neander-Str. 6–8 · 52355 Düren · Germany
Tel.: +49 24 21 969-0 · Fax: +49 24 21 969-199 · info@mn-net.com · ***www.mn-net.com***

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