

REF 985081

Test 0-81

03.23

# NANOCOLOR<sup>®</sup> 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 <sub>4</sub> -P)	0.5 – 15.0 mg/L PO <sub>4</sub> <sup>3-</sup>
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.

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:

In the order of magnitude of the concentration in a sample is not known, a preliminary test with QUANTOFIX<sup>®</sup> Phosphate (3–100 mg/L PO<sub>4</sub><sup>3-</sup>, 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<sub>2</sub><sup>-</sup>, S<sup>2-</sup> (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<sup>®</sup> photometers and PF-12 see manual, test 0-81.

## Measurement when samples are colored or turbid:

For all NANOCOLOR<sup>®</sup> 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)

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