

REF 985 081

en

Test 0-81

07.11

**NANOCOLOR® ortho- and total Phosphate 5****Method:**

Photometric determination as molybdenum blue after acidic hydrolyzes and oxidation at 100–120 °C

Range:	<b>0.20–5.00 mg/L P (PO<sub>4</sub>-P)</b>	<b>0.5–15.0 mg/L PO<sub>4</sub><sup>3-</sup></b>
Factor:	<b>08.23</b>	<b>025.0</b>
Wavelength (HW = 5–12 nm):	<b>690 nm</b>	
Decomposition:	<b>30 min</b> at 120 °C or <b>60 min</b> at 100 °C	
Reaction time:	<b>10 min (600 s)</b> 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 total Phosphate 5 R4 contains hazards which are not labelled with <Xi> (certificate of exemption for small quantities), see 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<sub>4</sub><sup>3-</sup>, REF 913 20) 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

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

**Procedure:**

Requisite accessories: piston pipettes 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** total Phosphate 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** total Phosphate R3 and **200 µL** (= 0.2 mL) total Phosphate 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** total Phosphate R3 and

- 200 µL** (= 0.2 mL) total Phosphate 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-10/PF-11/PF-12 see manual, test 0-81.

**Measurement when samples are coloured or turbid:**

For all NANOCOLOR® photometers see manual, chapter 5.11., 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 925 011) or Sewage outflow 2 (REF 925 010)