

REF 985 080

en

Test 0-80

11.11

**NANOCOLOR® ortho- and total Phosphate 15****Method:**

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

|                               |                                                    |                                                  |
|-------------------------------|----------------------------------------------------|--------------------------------------------------|
| Range:                        | <b>0.30–15.00 mg/L P (PO<sub>4</sub>-P)</b>        | <b>1.0–45.0 mg/L PO<sub>4</sub><sup>3-</sup></b> |
| Factor:                       | <b>15.01</b>                                       | <b>046.3</b>                                     |
| Wavelength<br>(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 15
- 1 tube *NANOFIX* total Phosphate 15 R2
- 1 tube *NANOFIX* total Phosphate 15 R3
- 1 test tube with 5 mL total Phosphate 15 R4

**Hazard warning:**

Reagent total Phosphate 15 R4 contains hazards which are not labelled with <Xi> (certificate of exemption for small quantities), see 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 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. If higher amounts of organic compounds and/or organic phosphorus compounds are present, use *NANOCOLOR® NanoX Metal* (REF 918 978) for decomposition.

The following quantities of ions will not interfere:

≤ 10 mg/L As, NO<sub>2</sub><sup>-</sup>, S<sup>2-</sup> (only ortho-P); ≤ 100 mg/L Fe, Cu, Cr; ≤ 500 mg/L Si.

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

**0.5 mL** test sample (*the pH value of the sample must be between pH 0 and 10*) and  
**1 *NANOFIX* total Phosphate R2.**

Screw cap back on to test tube, shake.

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

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

**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.

**Notes:**

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 0-80.

**Measurement when samples are colored 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 influx (REF 925 012)