

REF 985 079

en

Test 0-79

04.12

NANOCOLOR® ortho- and total Phosphate 50**Method:**

Photometric determination of the yellow phosphate-molybdate-vanadate complex after acidic hydrolysis and oxidation at 100–120 °C

Range:	10.0–50.0 mg/L P (PO₄-P)	30–150 mg/L PO₄³⁻
Factor:	027.5	0084.
Wavelength (HW = 5–12 nm):	436 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:

- 19 test tubes total Phosphate 50
- 1 tube NANOFIX total Phosphate 50 R2
- 2 test tubes with 11 mL total Phosphate 50 R3
- 1 test tube with blank value "NULL"

Hazard warning:

R3 contains sulphuric acid < 20%.
R35 Causes severe burns. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. For further details 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 913 20) rapidly gives this information. From the order of magnitude the required dilution can be calculated and prepared directly.

Interferences:

If the ortho-phosphate content is higher than the total phosphorous content, destroyable colors (turbidities) falsely increase the ortho-phosphate reading.
Precipitations after hydrolysis can be removed by membrane filtration prior to the determination.

Silica < 1000 mg/L Si will not interfere.

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

Procedure:

Requisite accessories: piston pipette with tips

total Phosphorous

- Open test tube, add
4.0 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, shake once again and allow to cool down to room temperature.
Add
1.0 mL total Phosphate R3, 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 1 and 13*) and
1.0 mL total Phosphate R3, 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 phosphorous without R2 and ortho-phosphate.

Measurement:

For NANOCOLOR® photometers and PF-10 / PF-11 / PF-12 see manual, test 0-79.

Measurement when samples are coloured 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 Seepage water (REF 925 013)