

REF 985 080

en

Test 0-80

02.17

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

Photometric determination as molybdenum blue after acidic hydrolysis and oxidation at 100–120 °C
The test is equivalent to the EPA method 365.3.

Range:	0.30–15.00 mg/L P (PO₄-P)	1.0–45.0 mg/L PO₄³⁻
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 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 R2 contains sodium peroxodisulfate 20–100 %, 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, P272, P280, P302+352, P304+340, P333+313, P342+311, P363 Avoid breathing dust. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves / eye protection. IF ON SKIN: Wash with plenty of water / ... IF INHALED: Remove person to fresh air and keep comfortable for breathing. If skin irritation or rash occurs: Get medical advice / attention. If experiencing respiratory symptoms: Call a POISON CENTER / doctor / ... Wash contaminated clothing before reuse. For further information 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:

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, NO₂⁻, S²⁻ (only ortho-P); ≤ 100 mg/L Fe, Cu, Cr; ≤ 500 mg/L Si, < 1500 mg/L COD (reference to potassium hydrogen phthalate)

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 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 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

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

1 NANOFIX R3 and

200 µL (= 0.2 mL) 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.

Fast cooling of the cells/cuvettes under cold water can lead to clot formation by the NANOFIX capsules.

Measurement:

For NANOCOLOR® photometers and PF-12 see manual, test 0-80.

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 influx (REF 925 012)