

REF 985 055

en

Test 0-55

03.16

NANOCOLOR® ortho- and total Phosphate 45**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:	5.0–50.0 mg/L P (PO ₄ -P)	15–150 mg/L PO ₄ ³⁻
Wavelength (HW = 5–12 nm):	690 nm	
Decomposition:	30 min at 120 °C / 60 min at 100 °C	
Reaction time:	10 min (600 s) at 20–25 °C	

Contents of reagent set:

20 test tubes total Phosphate 45
 1 tube NANOFIX total Phosphate 45 R2
 1 tube NANOFIX total Phosphate 45 R3
 1 test tube with 5 mL total Phosphate 45 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:

≤ 1000 mg/L S²⁻; ≤ 500 mg/L NO₂⁻; ≤ 0,1 mg/L As (only ortho-P);
 ≤ 1000 mg/L Cu, Fe, Si; ≤ 100 mg/L Cr(III);
 < 3000 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
200 µL (= 0.2 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
200 µL (= 0.2 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, screw cap back on to test tube, shake.
 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-12 see manual, test 0-55.

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 Seepage water (REF 925 013)