REF 985 055

en

Test 0-55 08.11
NANOCOLOR® ortho- and total Phosphate 45

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

Range:	**5.0–50.0 mg/L P (PO_4-P)**	**15–150 mg/L PO_4^{3-}**
Factor:	**047.8**	**0146.**
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 total Phosphate 45 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_4^{3-}, 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 or 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 S^{2-}; ≤ 500 mg/L NO_2^-; ≤ 0,1 mg/L As (only ortho-P);
≤ 1000 mg/L Cu, Fe, Si; ≤ 100 mg/L Cr(III)

The method ortho-P can also be applied 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*** 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
200 µL (= 0.2 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, 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-11 / PF-12 see manual, test 0-55.

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 Seepage water (REF 925 013)

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PD 14122 / A031018 / 985 055 / 0813