

Phosphate

High sensitivity test kit for the determination in the range of 0.05–1.0 mg/L P

Method:

Phosphomolybdenum blue

Contents of test kit (*refill pack):

sufficient for 300 tests

100 mL P-1*

100 mL P-2*

2 round glass tubes with screw caps

1 comparator block

1 color comparison disc Phosphate

Hazard warning:

P-1 contains sulfuric acid 15–30 %, P-2 contains sodium disulfite 10–25 %.

H314 Causes severe skin burns and eye damage.

P260sh, P280sh, P303+361+353, P305+351+338, P310 Do not breathe dust/vapors. Wear protective gloves/eye protection. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

Procedure:

1. Insert color comparison disc (see illustration).
2. Open both round glass tubes, rinse several times with the water sample and fill up to the mark with the sample.
3. Add 6 drops P-1 to the right glass tube, close and mix.
4. Add 6 drops P-2 to the right glass tube, close and mix. Wait 10 min.
5. Reading: Turn color disc until both colors match by transmitted light from above. Read test results from the mark on the front side of the comparator (see illustration). Intermediate values can be estimated.
6. After use clean both round glass tubes thoroughly and close.

mg/L P	mg/L PO ₄ ³⁻	mg/L P ₂ O ₅	mmol/m ³
0.05	0.15	0.11	1.6
0.10	0.31	0.23	3.2
0.15	0.46	0.34	4.8
0.20	0.61	0.46	6.5
0.3	0.9	0.7	10
0.4	1.2	0.9	13
0.6	1.8	1.4	19
0.8	2.5	1.8	26
1.0	3.1	2.3	32

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

Disposing of the samples:

The used analysis specimens can be flushed down the drain with tap water and channelled off to the local sewage treatment works.

Interferences:

Oxidizing agents in larger amounts inhibit formation of the blue color complex. They must be destroyed prior to the determination.

The following ions will not interfere:

≤ 1 mg/L Si(IV)

≤ 2 mg/L H₂S

≤ 10 mg/L heavy metals

The temperature of the water sample should be between 18 and 30 °C. Outside this range the rate of the reaction decreases by finding less phosphate than actually present.

