HPT487 Orthophosphate

DOC312.53.94430

0.01–0.50 mg/L PO_4-P HPT487

Scope and application: For waste water, drinking water, boiler water, surface water and process analysis.

Test preparation

Test storage

Storage temperature: 15–25 °C (59–77 °F)

pH/Temperature

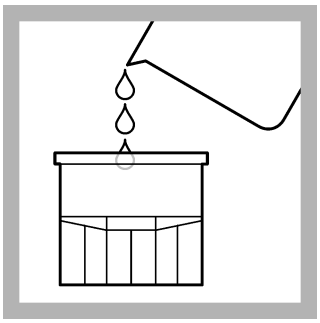
The pH of the water sample must be between pH 2–10.

The temperature of the water sample and reagents must be between 15–25 °C (59–77 °F).

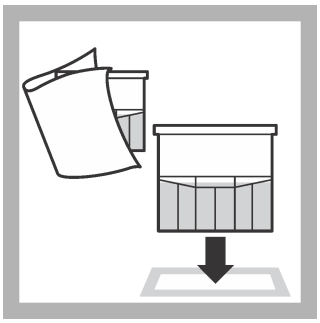
Before starting

Determination of orthophosphate: filtrate the sample before analysis.
Vial Tests TNT843, TNT844 or TNT845 must be used for the determination of total phosphorus.
The method is applicable for DR3900, DR4900 and DR6000 only.
Review safety information and expiration date on the package.
Review the Safety Data Sheets (MSDS/SDS) for the chemicals that are used. Use the recommended personal protective equipment.
Dispose of reacted solutions according to local, state and federal regulations. Refer to the Safety Data Sheets for disposal information for unused reagents. Refer to the environmental, health and safety staff for your facility and/or local regulatory agencies for further disposal information.

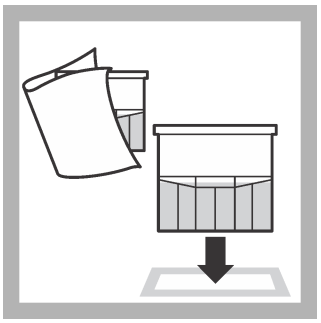
Procedure



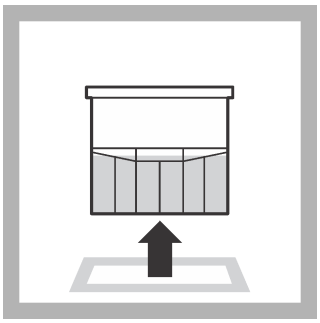
1. Fill the **blank** cell with DI water.



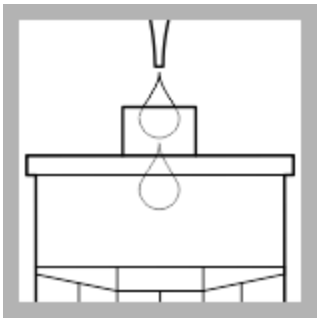
2. Thoroughly clean the outside of the blank. Insert the blank into the cell holder. Push **ZERO**.



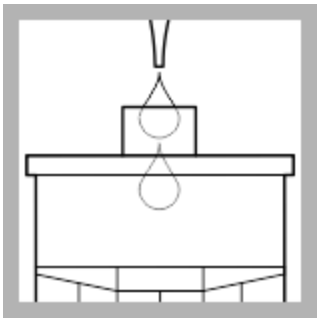
3. Thoroughly clean the outside of the blank. Insert the **blank** into the cell holder.
Go to **Stored Programs**.
Select the test: push **ZERO**.



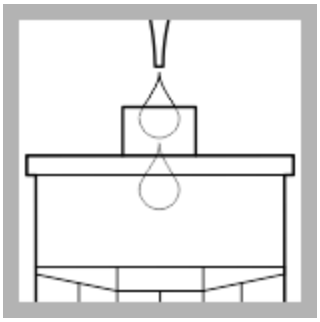
4. Remove the blank from the cell holder.



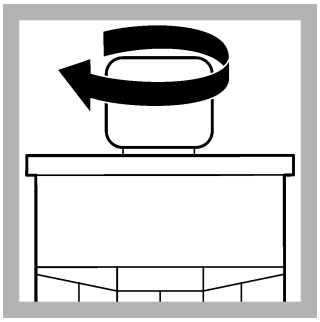
5. Carefully pipet into the **sample** cell: **0.5 mL** of **solution A**.



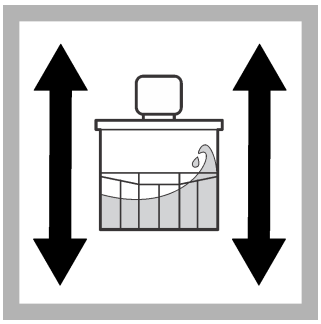
6. Carefully pipet into the same cell: **5.0 mL** of **sample**.



7. Carefully pipet into the same cell: **0.5 mL** of solution **B**.



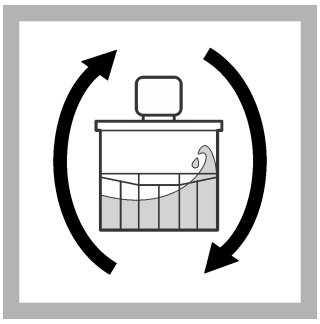
8. Screw a **DosiCap C** on the cell.



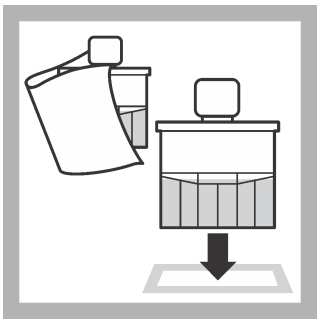
9. Shake the cell a few times until the freeze-dried contents of the DosiCap are dissolved.



10. Start the reaction timer for **10 minutes**.



11. After 10 minutes, invert a few more times.



12. Thoroughly clean the outside of the cell. Insert the cell into the cell holder. Push **READ**.

Interferences

The ions listed in the table have been individually checked against the given concentrations and do not cause interference. The cumulative effects and the influence of other ions have not been determined.

The measurement results must be subjected to plausibility checks (dilute and/or spike the sample).

Interference level	Interfering substance
5000 mg/L	SO_4^{2-}
2000 mg/L	Cl^-
1000 mg/L	K^+, Na^+
500 mg/L	NO_3^-
250 mg/L	Ca^{2+}
100 mg/L	Mg^{2+}
50 mg/L	Co^{2+}, Fe^{2+}, Fe^{3+}, Zn^{2+}, Cu^{2+}, I^-, Cd^{2+}, NH_4^+, CO_3^{2-}, SiO_2
25 mg/L	Ni^{2+}, Mn^{2+}, Al^{3+}
10 mg/L	NO_2^-
5 mg/L	Hg^{2+}
2.5 mg/L	Ag^+, Pb^{2+}
1 mg/L	Cr^{3+}, Sn^{4+}
0.5 mg/L	Cr^{6+}

Summary of method

Phosphate ions react with molybdate and antimony ions in an acidic solution to form an antimonyl phosphormolybdate complex, which is reduced by ascorbic acid to phosphormolybdenum blue.

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