HPT251 Iron

DOC312.53.94431

0.01–1.00 mg/L Fe or 0.012–1.200 mg/L Fe (Metals Prep Set TNT890) **TNTplus® HPT251—Method 10306**

Scope and application: For drinking water, raw water, swimming-pool water, wastewater and process analysis.

Test preparation

Reagent storage

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

pH/Temperature

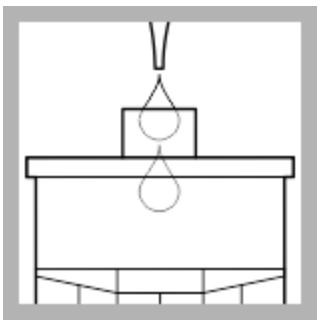
The pH of the water sample must be between pH 3–10.

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

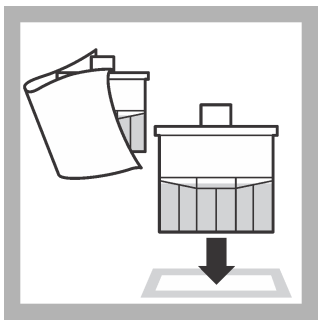
Before starting

For exact evaluation it is very important that there are no air bubbles in the beam path (lower half of the cell). If any air bubbles should adhere to the cell walls they can be removed by gentle shaking or tapping the cell.
Undissolved iron and iron contained in complexes can only be determined after digestion with Metals Prep Set TNT890. The reagent blank must be taken into consideration in the evaluation. The working procedure can be obtained from the manufacturer's website.
For sample-specific blanks, e.g. in serial analysis, make use of 50 mm cells LZP341 as an alternative. Blanks and samples can be prepared that way for fast measurement.
The procedure 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.

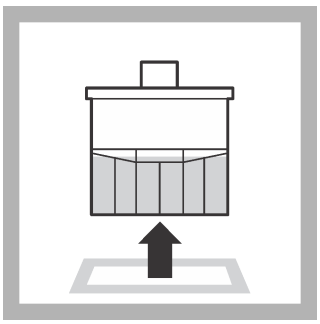
Procedure



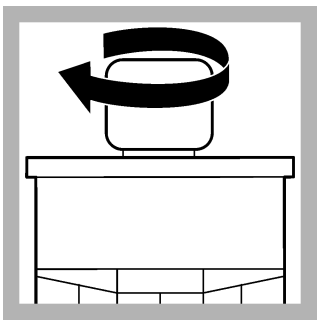
1. Carefully pipet **5.0 mL** of **sample**.



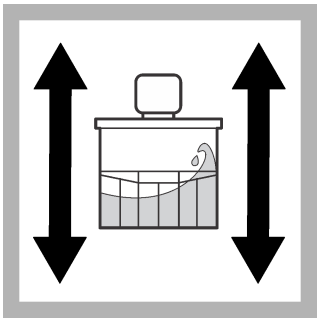
2. Thoroughly clean the outside of the cell. Insert the cell into the cell holder. Push **ZERO**. **Take care that there are no air bubbles!**



3. Remove the cell from the cell holder.



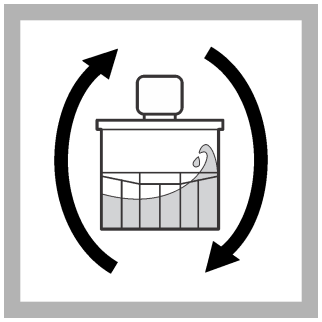
4. Screw a **DosiCap A** on the cell.



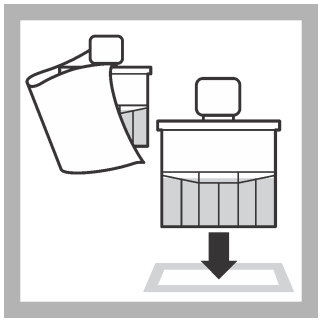
5. Shake the cell a few times until the freeze-dried contents of the DosiCap are dissolved.



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



7. After **10 minutes**, invert a few more times.



8. Thoroughly clean the outside of the cell. Insert the cell into the cell holder. Push **READ**.
Take care that there are no air bubbles!

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.

Higher amounts of copper, nickel, and tin cause high-bias results.

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

Interference level	Interfering substance
1000 mg/L	Cl^-, SO_4^{2-}
500 mg/L	K^+, Na^+, Ca^{2+}
50 mg/L	Pb^{2+}, Cr^{6+}
40 mg/L	Cd^{2+}, NO_3^-
25 mg/L	Ni^{2+}
15 mg/L	Cr^{3+}, CO_3^{2-}
5 mg/L	Cu^{2+}, Co^{2+}
2 mg/L	Sn^{2+}

Summary of method

Iron(II) ions form an orange-red complex with 1.10-phenanthroline (both methods).

Any iron(III) ions present in the water sample are reduced to iron(II) ions by ascorbic acid before the complex is formed (method $Fe^{2+/3+}$/tot. only).

TNTplus®

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02/2026, Edition 2