LCK 537 Nickel

DOC312.53.94364

0.05–1.00 mg/L Ni or 0.06–1.20 mg/L Ni (Crack-Set LCW 902) LCK 537

Scope and application: For wastewater, drinking water, and process analysis.

Test preparation

Test storage

Storage temperature: 2–8 °C (35–46 °F)

pH/Temperature

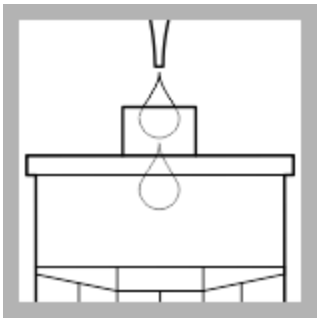
The pH of the water sample must be between 2–6.

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

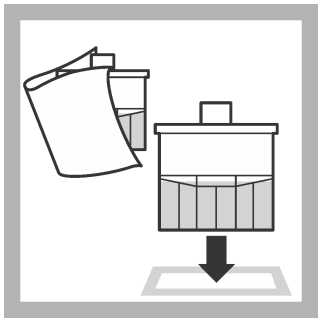
Before starting

For exact evaluation it is very important that there are no air bubbles in the beam path (lower half of the cuvette). If any air bubbles should adhere to the cuvette walls they can be removed by gentle shaking or tapping the cuvette.
Undissolved nickel and nickel contained in complexes can only be determined after digestion with Crack-Set LCW 902. The working procedure can be obtained from the manufacturer's website.
Nickel concentrations greater than the measuring range cause precipitation in the cuvette. In such cases the water sample must first be diluted with distilled water.
For sample-specific blanks, e.g. in serial analysis, make use of 50 mm cuvettes LZP341 or LZM381 as an alternative. Blanks and samples can be prepared that way for fast measurement.
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.

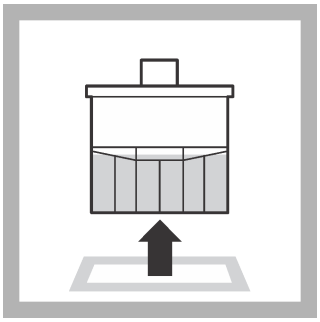
Procedure



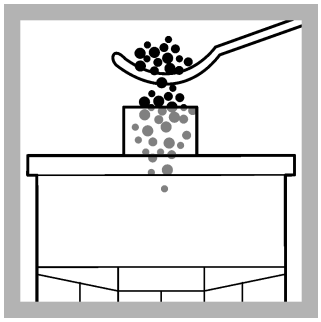
1. Carefully pipet **4.2 mL sample**.



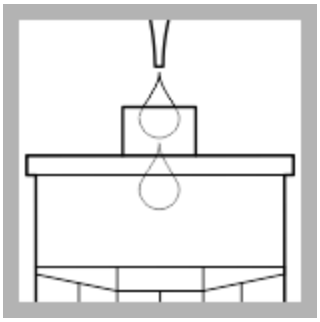
2. Thoroughly clean the outside of the cuvette. Insert the cuvette into the cell holder. Push **ZERO**. **Take care that there are no air bubbles!**



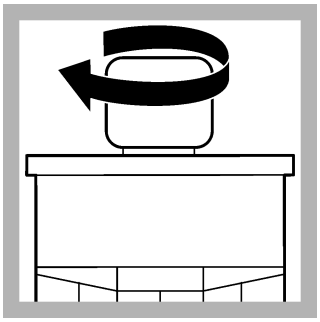
3. Remove the cuvette from the cell holder.



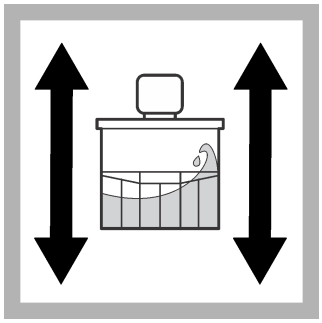
4. Add **1 dosing spoon** reagent **B**.



5. Carefully pipet **0.6 mL** of solution **A**.

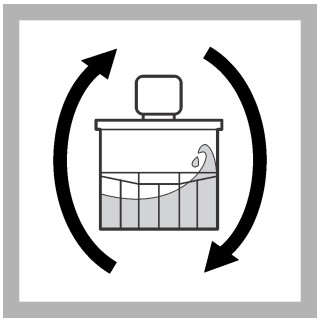


6. Screw a cap **C** on the cuvette.

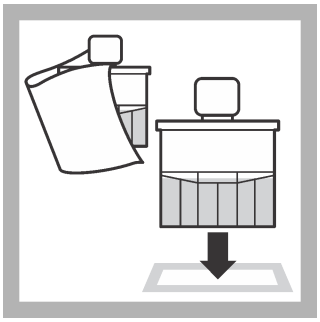


7. Shake the cuvette a few times until the reagents **A** and **B** are dissolved.

8. Start the reaction timer for **5 minutes**.



9. After 5 minutes, invert a few more times.



10. Thoroughly clean the outside of the cuvette. Insert the cuvette 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	K^+, Na^+, Cl^-
500 mg/L	NO_3^-, PO_4^{3-}, SO_4^{2-}
250 mg/L	NH_4^-, CO_3^{2-}
100 mg/L	Ca^{2+}
50 mg/L	Zn^{2+}, NO_2^-
10 mg/L	Al^{3+}, Cd^{2+}, Sn^{2+}, Pb^{2+}
1 mg/L	Ag^+, Fe^{2+}, Fe^{3+}, Cu^{2+}, Cr^{3+}, Cr^{6+}

Summary of method

In the presence of an oxidizing agent, nickel ions react with dimethylglyoxime in an alkaline solution to form an orange-brown-colored complex.

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06/2019, Edition 1