LCK359 Tin

DOC312.53.94165

Method

0.1–2.0 mg/L Sn **LCK359**

Scope and application: For wastewater and process analysis.

Test preparation

Test storage

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

pH/Temperature

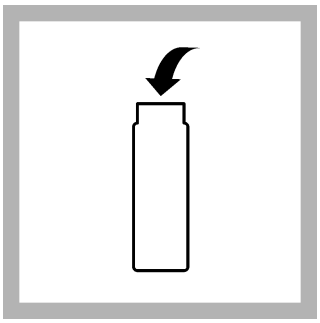
The pH of the water sample must be between pH 2–9.

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

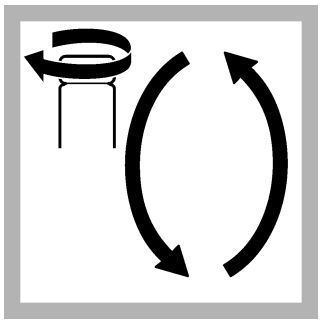
Before starting

The analysis must be carried out **immediately** after the sample has been taken.
The term ”soluble tin“ is understood to refer to complex or undissolved tin compounds (e.g. tin-NTA complex) that can be converted to the dissolved form in a hydrochloric acid medium in the presence of an oxidizing agent. Dissolved tin(II) and (IV) - ions are also determined.
The procedure is applicable for DR1900, DR3900 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.

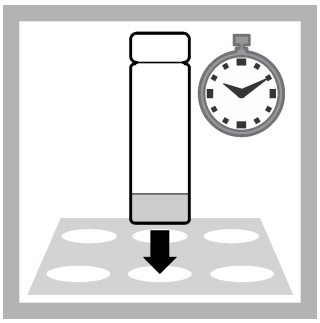
Procedure I—Soluble tin



1. Add to a dry reaction tube: **2.3 mL solution A, 2.3 mL sample, 1 dosing spoon B**.

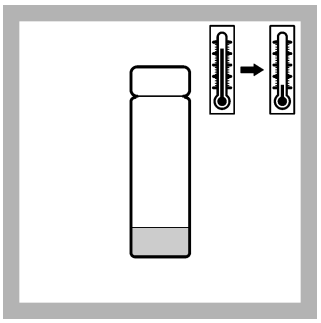


2. Close the reaction tube and invert a few times.

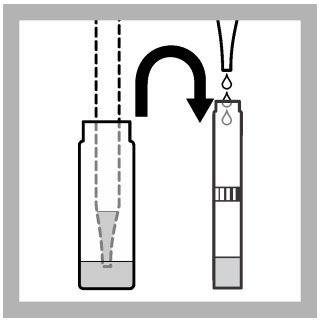


3. Heat **immediately**. **HT200S:** in the standard program HT for **15 minutes**.

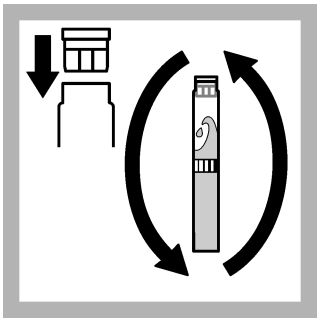
Thermostat: for **30 minutes** at **100° C** (212° F).



4. Allow to cool down before carrying out the analysis.



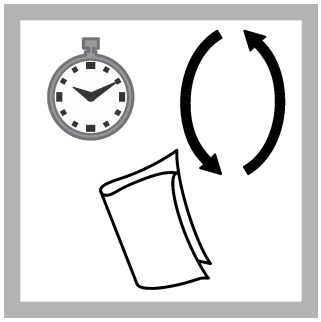
5. Open the reaction tube. Pipet into the **sample cuvette**: **2.0 mL digested sample** and **0.2 mL solution C**.



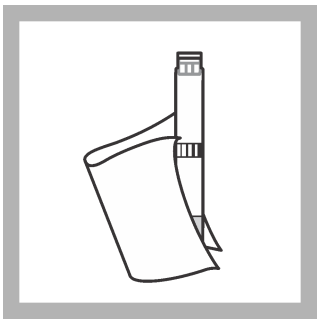
6. Close the **sample cuvette** and invert a few times.



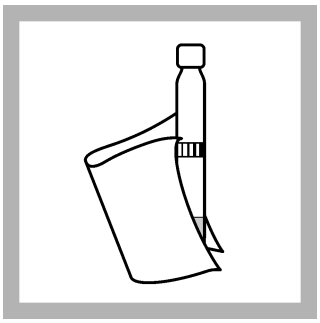
7. Wait **10 minutes**.



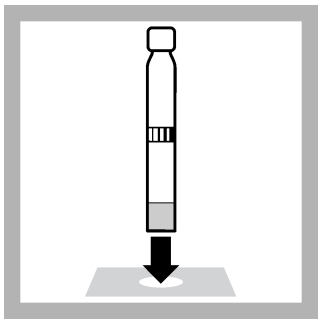
8. Invert the **sample cuvette** a few more times.



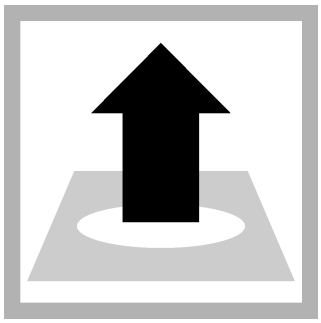
9. Thoroughly clean the outside of the **sample cuvette**.



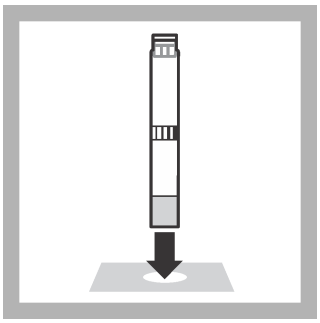
10. Thoroughly clean the outside of the **zero cuvette**.



11. Insert the **zero cuvette** into the cell holder.
DR 1900: Go to LCK/TNTplus methods.
Select the test, push **ZERO**.

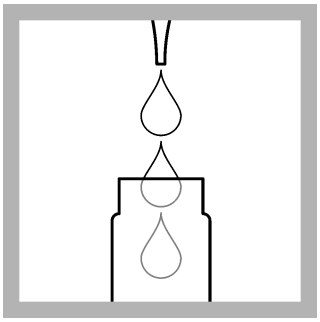


12. Remove the zero cuvette.

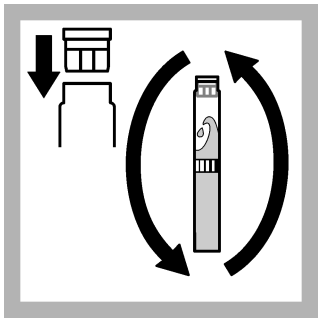


13. Insert the **sample cuvette** into the cell holder.
DR1900: Go to LCK/TNTplus methods.
Select the test, push **READ**.

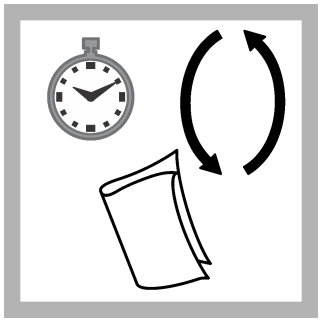
Procedure LCK359 II—Dissolved tin



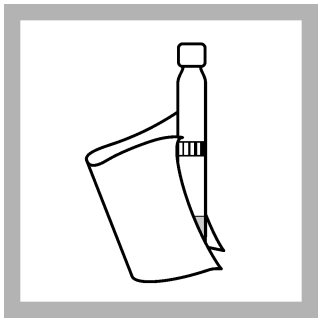
1. Pipet into the **sample cuvette**: **1.0 mL solution A**, **1.0 mL sample** and **0.2 mL solution C**.



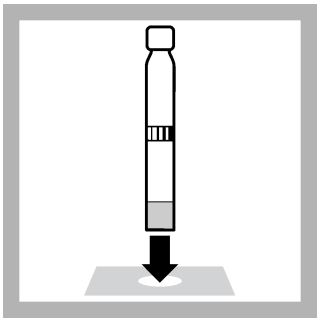
2. Close the **sample cuvette** and invert a few times.



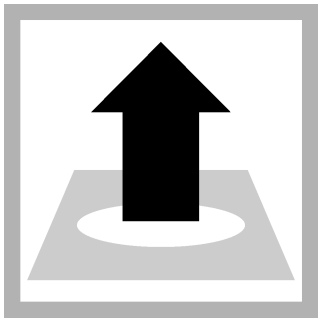
3. After **10 minutes**, invert a few more times, thoroughly clean the outside of the **sample cuvette**.



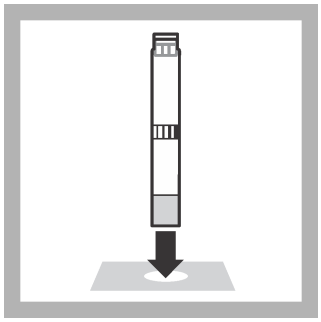
4. Thoroughly clean the outside of the **zero cuvette**.



5. Insert the **zero cuvette** into the cell holder.
DR 1900: Go to LCK/TNTplus methods.
Select the test, push **ZERO**.



6. Remove the zero cuvette.



7. Insert the **sample cuvette** into the cell holder.
DR1900: Go to LCK/TNTplus methods.
Select the test, 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
2000 mg/L	Na^+, K^+, NH_4^+, NO_3^-
1000 mg/L	Ca^{2+}, Cl^-, SO_4^{2-}
250 mg/L	Mg^{2+}
50 mg/L	Mn^{2+}, Fe^{2+}, Fe^{3+}, CO_3^{2-}, PO_4^{3-}, Co^{2+}
25 mg/L	Cd^{2+}, Ag^+, Ni^{2+}, Al^{3+}, Zn^{2+}, Pb^{2+}, Cr^{3+}, Cu^{2+}, Hg^{2+}
5 mg/L	Cr^{6+}

Summary of method

Tin(II) and tin(IV) ions form a red colored complex with pyridylfluoron (PYF).

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