LCK1814 Chemical Oxygen Demand in salt water

DOC312.53.94170

7–70 mg/L O_2 **LCK1814**

Scope and application: For chloride-containing waste water, sea water, surface water and process analysis with 1.0–20 g/L chloride. For lower chloride concentration use LCK1414.

Test preparation

Test storage

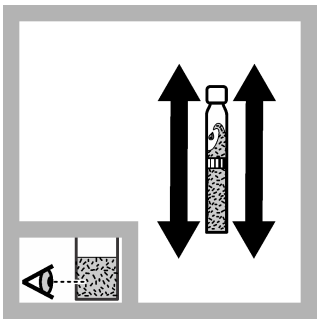
Storage temperature: 15–25 °C (59–77 °F)

Protect against light.

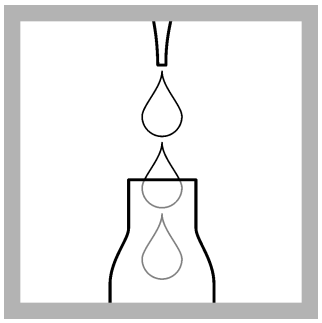
Before starting

According to the thermostat used, choose the corresponding evaluation method: 1814 COD (HT)—with HT200S thermostat (at 170 °C, 15 minutes and at 148 °C, 2 hours)
1814 COD (LT)—with LT200 thermostat (at 148 °C, 2 hours)
With LT200 thermostat, the chloride content of the sample must be known. Determine the chloride content with **LCK311** (1–1000 mg/L Cl^-) or Quantab Chloride Teststrips (300–6000 ppm Cl^-).
In this condition the photometer displays COD values for 3 different chloride ranges:
at 1.0–<5 g/L chloride in the sample: mg/L COD 1.0–5 g/L Cl
at 5–10 g/L chloride in the sample: mg/L COD 5–10 g/L Cl
at >10–20 g/L chloride in the sample: mg/L COD 10–20 g/L Cl
Choose the right value related to the chloride concentration.
Caution: Expect strong heat generation, when adding the sample to the reagent contained in the cuvette.
The method is applicable for DR1900, 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.

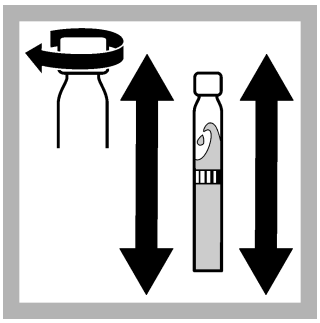
Procedure



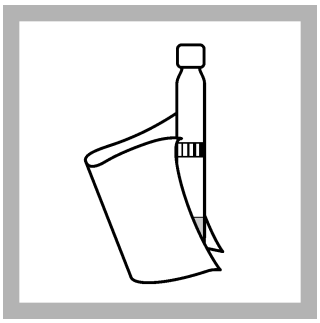
1. Shake **vigorously** to bring sediment **fully** into suspension.



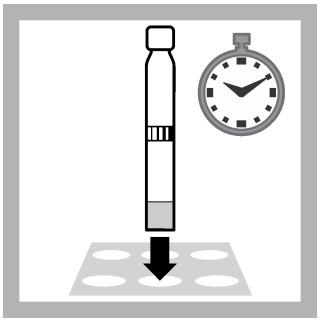
2. Immediately carefully pipet **1.8 mL** of **sample**.



3. Immediately close the cuvette and shake **vigorously**.

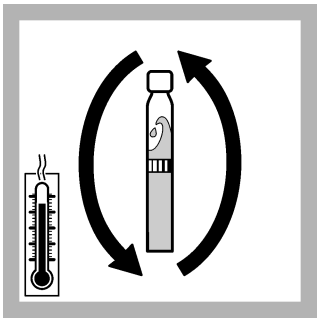


4. Thoroughly clean the outside of the cuvette.



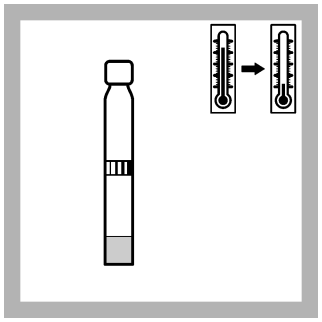
5. Heat in the thermostat.
COD classic: for **2 hours** at **148 °C** (298.4 °F).

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



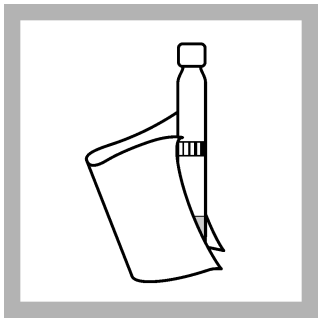
6. Remove the **hot** cuvette.
COD classic: Carefully invert **twice**.

HT200S: After the lock opens, carefully invert **twice**.

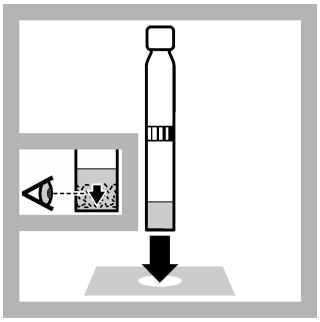


7. Allow to **cool** to room temperature.
COD classic: in a cooling rack.

HT200S: in the thermostat.



8. Thoroughly clean the outside of the cuvette and evaluate.
Note: *The sediment must be* ***completely settled*** *before evaluation is carried out.*



9. Insert the cuvette in the cell holder; choose the evaluation type according to the digestion method.
DR1900: Go to LCK/TNTplus methods.
Select the test, push **READ**.

Interferences

The method can be used for samples (or diluted samples) with chloride concentrations of 1.0–20 g/L. For lower chloride concentration use **LCK1414**. Insufficient shaking before adding the sample can result in high bias results. Make use of shaker LS120 as an option. In exceptional cases, waste water can contain ingredients for which the oxidation potential of this reagent-test is non sufficient. A high excess of COD can lead to result displays within the measuring range. If the sediment has not settled at the time of evaluation, centrifuge the cuvette at 4000 rotations per minute.

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

Summary of method

Oxidizable substances react with sulphuric acid and potassium dichromate solution in the presence of silver sulphate as a catalyst. Chloride is masked by mercury sulphate. The reduction in the yellow coloration of Cr^{6+} is evaluated.

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