

LCK 214 Chemical Oxygen Demand (COD)

DOC312.53.94131

0–1000 mg/L

LCK 214 Mercury-Free Method

Scope and application: For wastewater and process analysis.



Test preparation

Test storage

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

Protect against light.

Before starting

Review the Safety Data Sheets (MSDS/SDS) for the chemicals that are used. Use the recommended personal protective equipment.

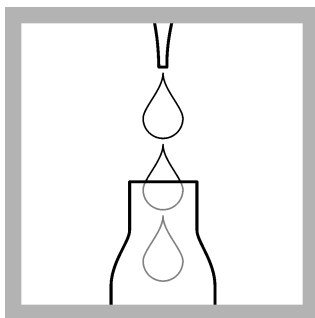
Dispose of reacted solutions according to local, state and federal regulations. Refer to the Safety Data Sheets for disposal information for unused reagents. Refer to the environmental, health and safety staff for your facility and/or local regulatory agencies for further disposal information.

To obtain a sustained accuracy at all levels (especially below 100 mg/L), the evaluation is always towards a blank-cuvette. The blank-cuvette (a reagent-cuvette with 2 mL distilled water) is stable and after cooking it can be saved and used for all packages with the same batch number. The number can be written on the white writing area on the cuvette label.

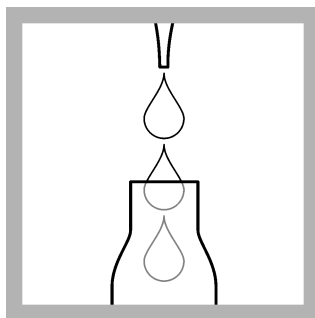
In contrast to the classic COD Cuvette Test (COD classic), the HT-COD Test is characterized by a higher digestion temperature and shorter digestion time.

Users are advised to carry out a comparison with the COD classic, in order to be sure that the results obtained from their own samples when using the HT-COD are comparable to the standard.

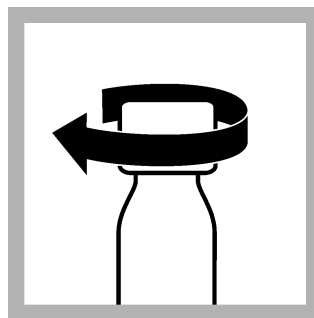
Procedure



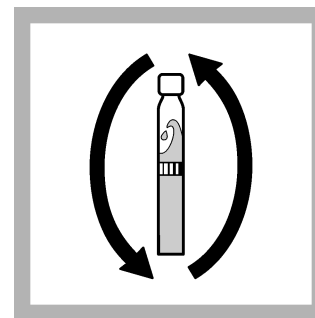
1. Blank-Cuvette: Carefully pipet **2.0 mL** of **deionized water** (blank).
(Only **1 blank** per batch)



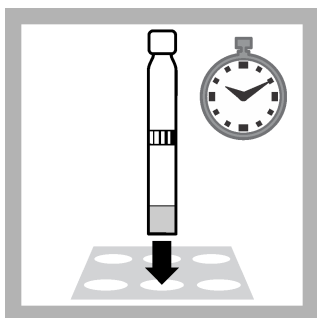
2. Sample cuvette: Carefully pipet **2.0 mL** of **sample**.



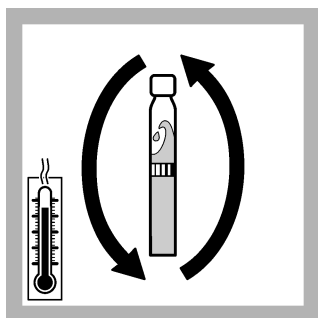
3. Close the cuvettes.



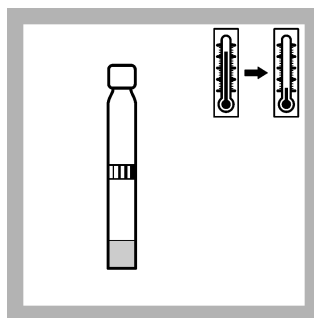
4. Blank-Cuvette and Sample-Cuvette: Invert to mix.



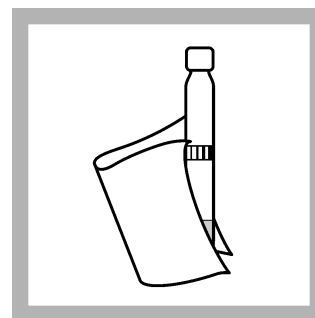
5. Blank-Cuvette and Sample-Cuvette: Heat in the thermostat.
COD classic: for 2 hours at 148 °C (298.4 °F).
HT 200 S: in the standard program HT for 15 minutes.



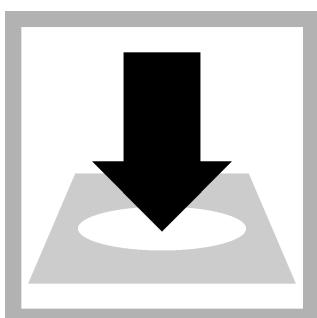
6. Blank-Cuvette and Sample-Cuvette: remove the hot cuvettes.
COD classic: Carefully invert twice.
HT 200 S: After the lock opens, carefully invert twice.



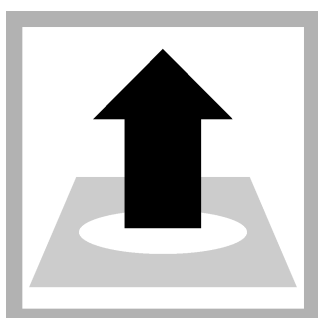
7. Blank-Cuvette and Sample-Cuvette: Allow to cool down to room temperature.
COD classic: in a cooling rack.
HT 200 S: in the thermostat.



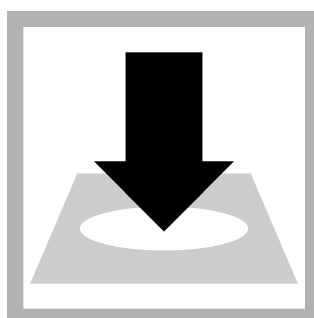
8. Blank-Cuvette and Sample-Cuvette: Thoroughly clean the outside of the cuvettes.



9. Insert the Blank-Cuvette into the cell holder.
 DR 1900: Go to LCK/TNTplus methods. Select the test—**control number 3**—push **READ 1**.



10. Remove the Blank-Cuvette from the cell holder.



11. Insert the Sample-Cuvette into the cell holder.
 DR 1900: push **READ 2**.

Interferences

Chloride is the primary interference in this test method and results in a positive interference. Above 100 mg/L chloride a precipitate may occur in the cuvette. The interference level is dependent on the chloride and COD concentration. Refer to the table below. **Example:** If a sample contains 200 mg/L COD and 100 mg/L Cl⁻, the positive interference is 10%. The reading would be 220 mg/L COD.

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

	COD			
Chloride	200 mg/L	400 mg/L	600 mg/L	800 mg/L
100 mg/L	10%	2%	2%	1%
200 mg/L	15%	10%	2%	1%
400 mg/L	20%	10%	5%	2%
600 mg/L	30%	10%	5%	5%
800 mg/L	35%	15%	10%	5%
1000 mg/L	45%	20%	10%	5%

Summary of method

Oxidizable substances react with sulphuric acid and potassium dichromate solution in the presence of silver sulphate as a catalyst. The green coloration of Cr^{3+} is evaluated.



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