LCK 331 Cationic surfactants

DOC312.53.94094

0.2–2.0 mg/L Cetyltrimethylammonium bromide LCK 331

Scope and application: Preliminary analysis of surface water, waste water and process control.

Test preparation

Test storage

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

pH/Temperature

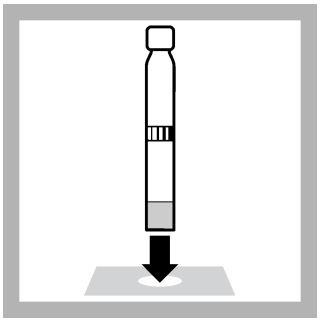
The pH of the water sample must be between pH 4–9.

The temperature of the water sample and reagents must be 22 °C (72 °F).

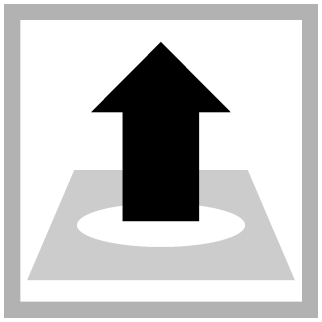
Before starting

Note:
If ambient temperature decreases, light turbidity can form in the chloroform phase. Increase the cuvette temperature briefly (for example, hold the cuvette in hands) to remove turbidity.
Make sure to work at the recommended temperature to get correct results.
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.

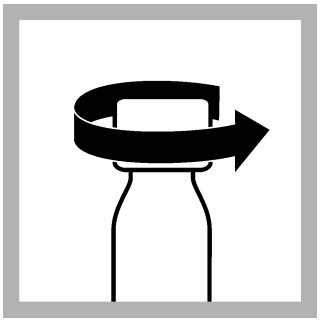
Procedure



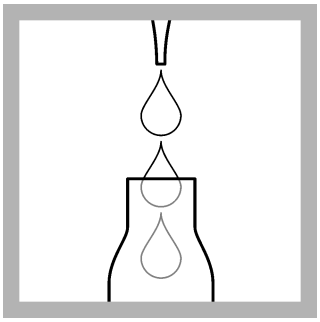
1. Insert the sample cuvette as blank-value cuvette in the photometer, before adding the water sample and reagents. DR1900: Go to LCK/TNTplus methods. Select the test.
Push **READ 1**.



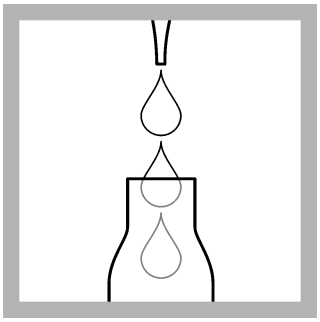
2. Remove the cuvette.



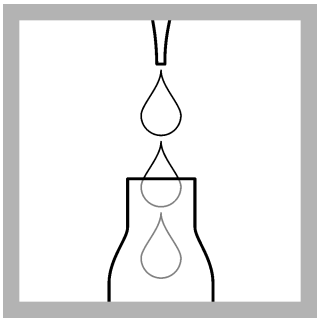
3. Open the cuvette.



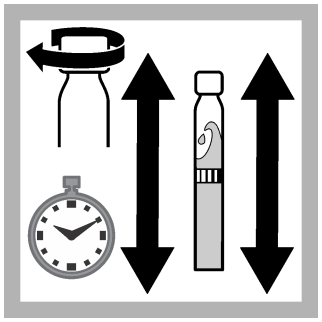
4. Carefully pipet **4.0 mL** of **sample**.



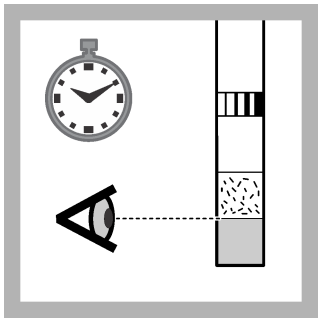
5. Carefully pipet **0.4 mL** of **solution A**.



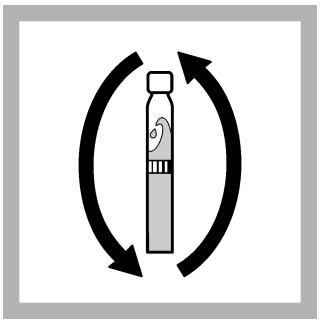
6. Carefully pipet **0.2 mL** of **solution B**.



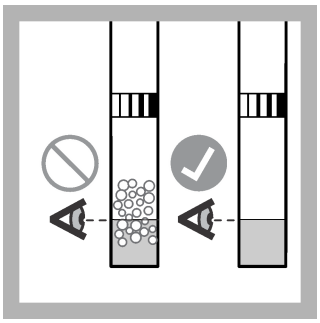
7. Close the cuvette. Hold the cuvette between the screw cap and the base, shake it for **2 minutes** not too vigorously.



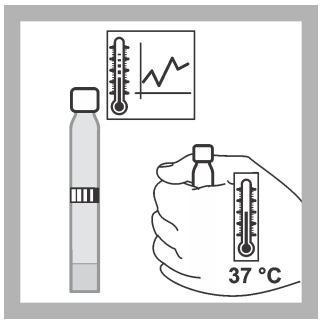
8. Leave the cuvette standing upright for **30 seconds** to allow phase separation to occur.



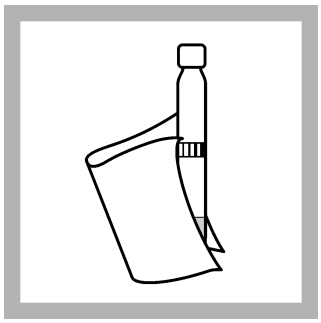
9. Carefully invert the cuvette **twice**.



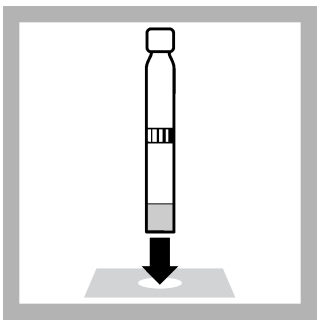
10. If streaks or small drops of water have formed in the lower part of the cuvette, they can be eliminated by carefully tilting the cuvette through 90 degrees while simultaneously rotating it.



11. Depending on the ambient temperature, slight turbidity may appear in the chloroform phase over the course of time.
This can be eliminated by warming the cuvette briefly (for example, by holding it in the hand).



12. Thoroughly clean the outside of the cuvette and evaluate.



13. Insert the cuvette into the cell holder.
DR 1900: Push **READ 2**.

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.

Anionic surfactants cause low-bias results.

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

Interference level	Interfering substance
2000 mg/L	Cl^-, Na^+
1000 mg/L	K^+, SO_4^{2-}, NO_3^-
500 mg/L	CO_3^{2-}, Ca^{2+}
200 mg/L	NH_4^+, PO_4^{3-}
100 mg/L	Mg^{2+}, NO_2^-, $S_2O_8^{2-}$
50 mg/L	Fe^{2+}, Fe^{3+}, Ni^{2+}, Zn^{2+} , Cu^{2+} , H_2O_2
25 mg/L	$S_2O_3^{2-}$, SO_3^{2-}
10 mg/L	Cr^{3+}, Cr^{6+}, Cl_2

Summary of method

Cationic surfactants react with bromophenol blue to form complexes, which are extracted in chloroform and evaluated photometrically.

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