

**Measuring range I (sample = 1.0 mL): 0.1–1.0 g/L,
Measuring range II (sample = 0.2 mL): 1–20 g/L**

LCK 334

Scope and application: For analysis of formulations and wash solutions; process analysis.



Test preparation

Test storage

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

pH/Temperature

The pH of the water sample must be between pH 3–9.

Due to the high salt content of acidic or alkaline degreasing baths, the pH must be adjusted to 7–8.

Acidic degreasing baths with a high iron content should not be neutralized, as this would cause precipitation of iron hydroxide, which can absorb large amounts of surfactant. In such cases it is advisable to carry out a preliminary extraction with ethyl acetate, or to dilute the sample appropriately (1:100–1:500) and use the Cuvette Test LCK 333.

Before starting

Note:

Depending on the surfactant types and their solubility, the phase separation may proceed very slowly or not at all. In such a case, the addition of 0.3 mL ethylene glycol (dealer in laboratory products) to the cuvette immediately before adding the sample may accelerate the phase separation. If this method is used, it is advisable to carry out a specific calibration with the surfactants.

If streaks or droplets form in the lower part of the cuvette they can be eliminated by carefully tilting the cuvette back and forth and rotating it while holding it at an angle.

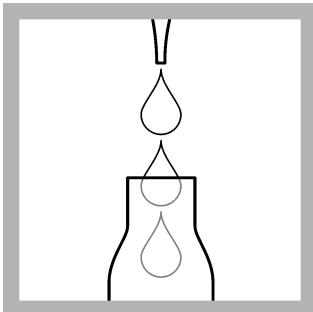
Make sure to work at the recommended temperature to get correct results.

Review safety information and expiration date on the package.

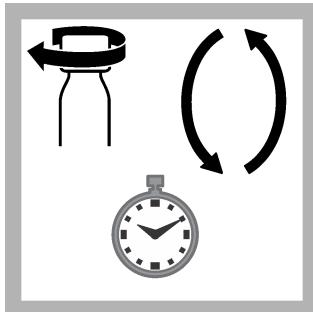
Review the Safety Data Sheets (MSDS/SDS) for the chemicals that are used. Use the recommended personal protective equipment.

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.

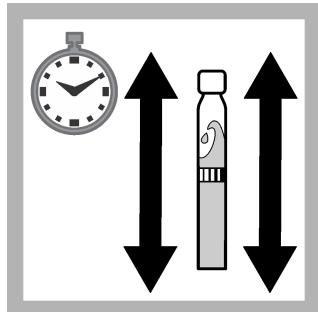
Procedure—Measuring Range I (0.1–1.0 g/L)



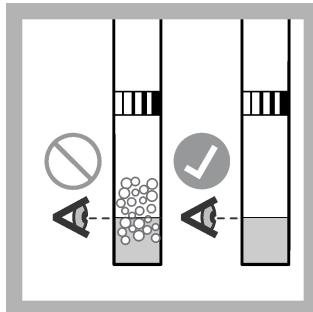
1. Carefully pipet **1.0 mL** of **sample**.



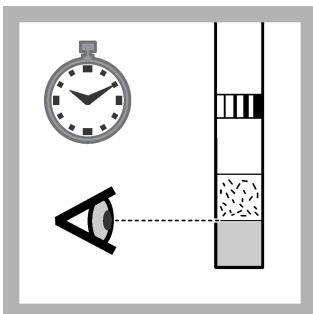
2. Close the cuvette and invert thoroughly. Wait **2 minutes**.



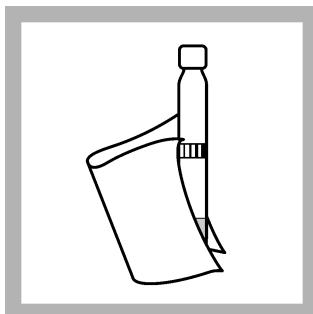
3. Hold the cuvette between the screw cap and the base, shake it for **2 minutes** vigorously.



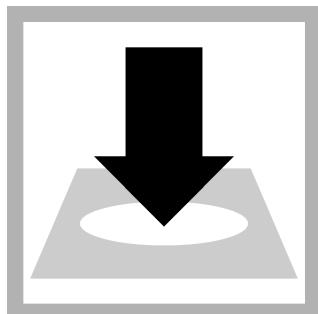
4. If streaks or small drops of water have formed in the lower part of the cuvette, they can be eliminated by carefully tilting the cuvette through 90 degrees while simultaneously rotating it.



5. Leave the cuvette standing upright for **a few minutes** to allow phase separation to occur.



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

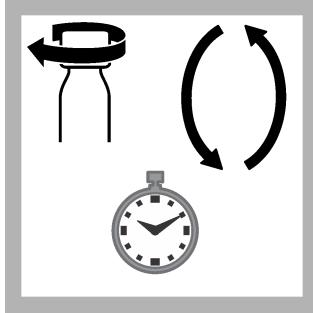


7. Insert the cuvette into the cell holder.
DR 1900: Go to LCK/TNTplus methods. Select the test, push **READ**.

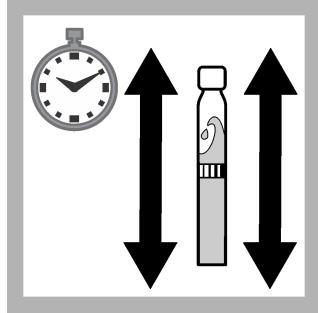
Procedure—Measuring range II (1–20 g/L)



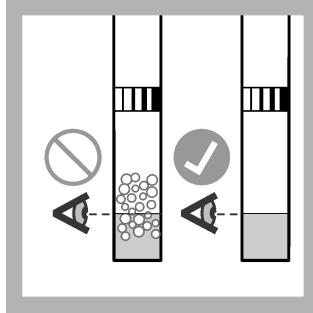
1. Carefully pipet **0.2 mL** of **sample**.



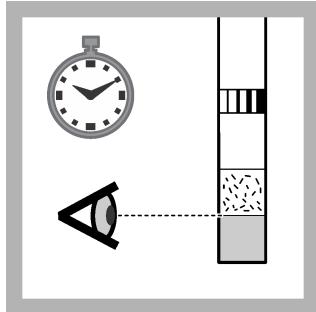
2. Close the cuvette and invert thoroughly. Wait **2 minutes**.



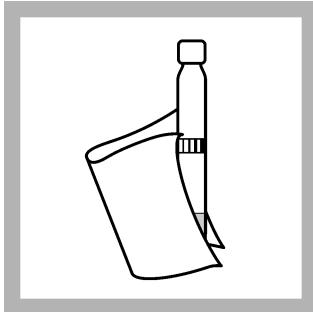
3. Hold the cuvette between the screw cap and the base, shake it for **2 minutes** vigorously.



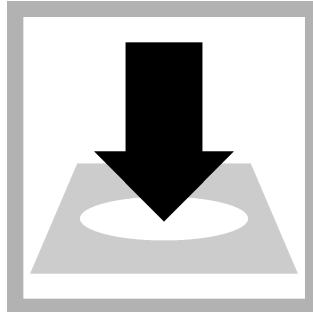
4. If streaks or small drops of water have formed in the lower part of the cuvette, they can be eliminated by carefully tilting the cuvette through 90 degrees while simultaneously rotating it.



5. Leave the cuvette standing upright for **a few minutes** to allow phase separation to occur.



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



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

Interferences

Cationic surfactants cause high-bias results to be obtained.

High concentrations of anionic surfactants cause low-bias results to be obtained.

Fatty acid esters and fatty acid alkanolamides are not detected. APGs (alkyl polyglycosides) are detected. Extremely slow phase separation and persistent streaks may make the analysis of highly polluted degreasing baths problematic or even impossible. In such cases dilute the sample appropriately (for example 1:100) and make use of Cuvette Test LCK 333.

Summary of method

Nonionic surfactants (ethoxylates with 3 to 20 ether bridges) react with cobalt thiocyanate, forming complexes. These are extracted in chloroform and photometrically evaluated.



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