

High measuring range—LCS028

Measuring range I:

Silicic acid (SiO₂): 0.8–20 mg/L or Silicon (Si): 0.4–10 mg/L;

Measuring range II:

Silicic acid (SiO₂): 20–100 mg/L or Silicon (Si): 10–50 mg/L

Scope and application: For boiler water and drinking water.



Test preparation

Reagent storage

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

pH/Temperature

The pH of the water sample must be between pH 3–10.

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

Items to collect

Description	Quantity
Sample cuvette LCW906	2

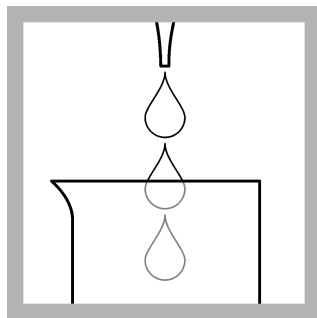
Before starting

Review safety information and expiration date on the package.

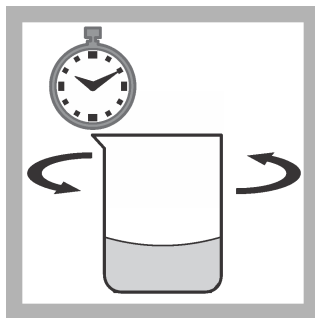
Review the Safety Data Sheets (MSDS/SDS) for the chemicals that are used. Use the recommended personal protective equipment.

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.

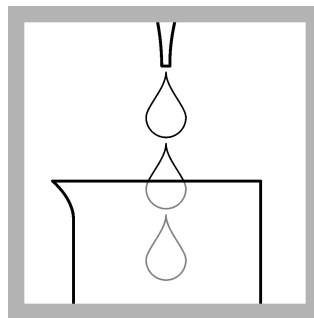
Procedure—Measuring Range I



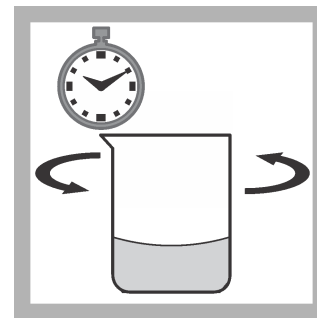
1. Sample preparation:
Pipet into a plastic beaker:
5 mL water sample,
20 mL double-distilled
water and 1 mL solution A.



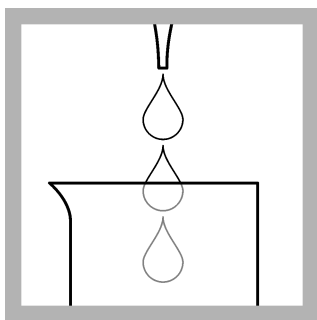
2. Mix, wait 3 minutes.



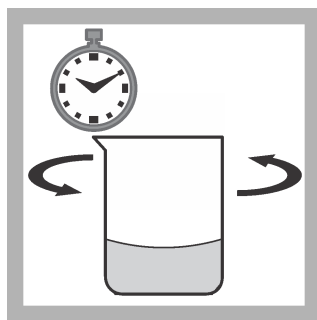
3. Pipet 1 mL solution B.



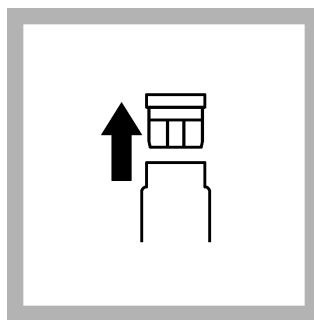
4. Mix, wait 3 minutes.



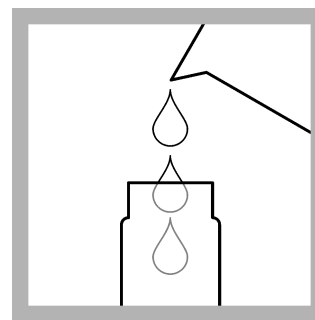
5. Pipet 1 mL solution C.



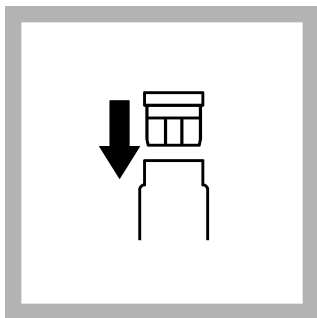
6. Mix and allow to stand for 25 minutes.



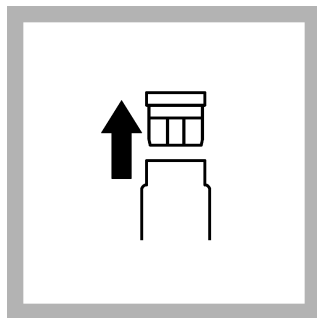
7. Open a round cuvette (LCW906).



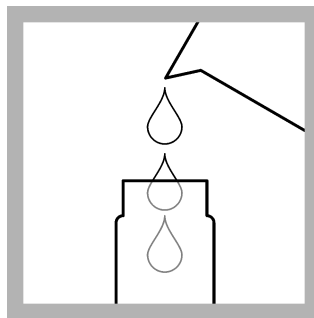
8. Fill the cuvette to maximum 1 cm below its mouth with the prepared sample.



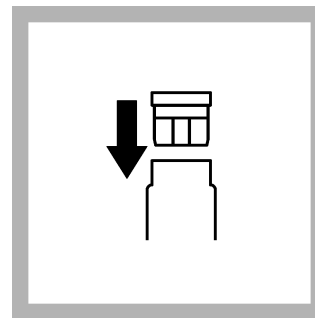
9. Close the cuvette.



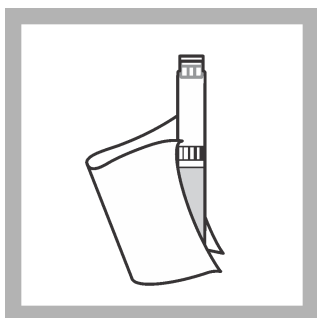
10. **Blank-value cuvette** preparation: Open a **second** round cuvette (LCW906).



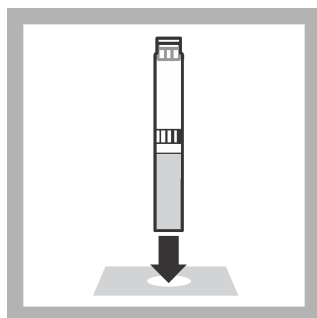
11. Fill the cuvette with **double-distilled water**.



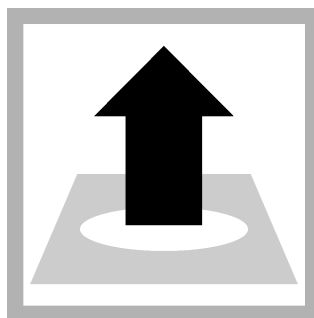
12. Close the cuvette.



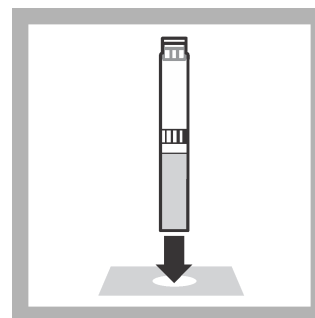
13. Thoroughly clean the outside of the cuvettes and evaluate.



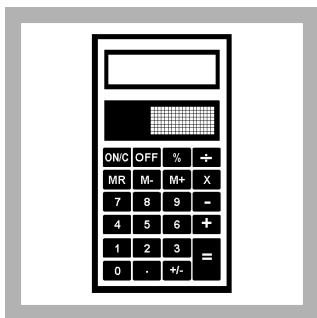
14. Insert the **blank-value cuvette** into the cell holder. Go to **Stored Programs**. Select the test. Push **ZERO**.



15. Remove the blank-value cuvette.

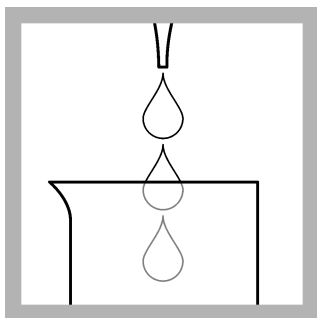


16. Insert the **sample cuvette** into the cell holder. Push **READ**.

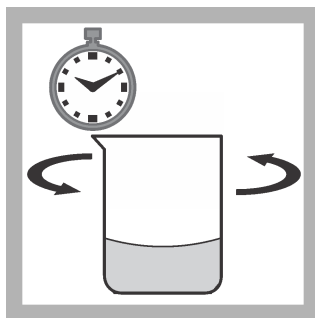


17. Multiply the **result displayed** with **22.25**.

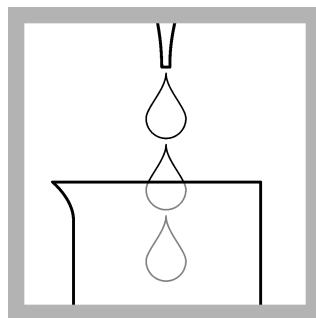
Procedure—Measuring Range II



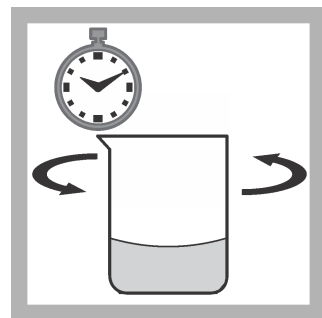
1. Sample preparation:
Pipet into a plastic beaker:
1 mL water sample, 24 mL double-distilled water and 1 mL solution A.



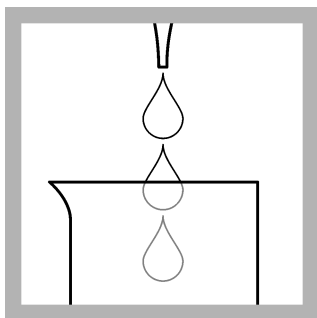
2. Mix, wait 3 minutes.



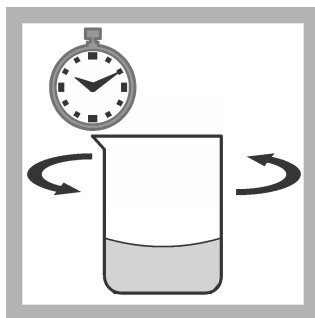
3. Pipet 1 mL solution B.



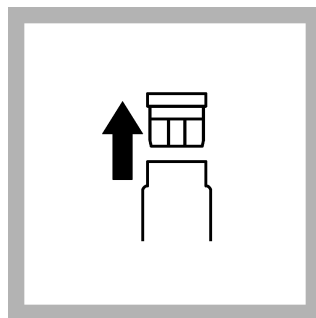
4. Mix, wait 3 minutes.



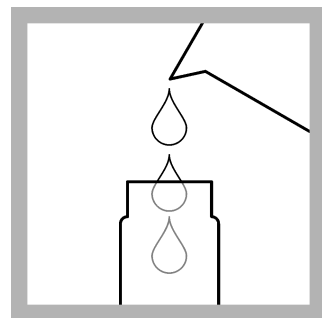
5. Pipet 1 mL solution C.



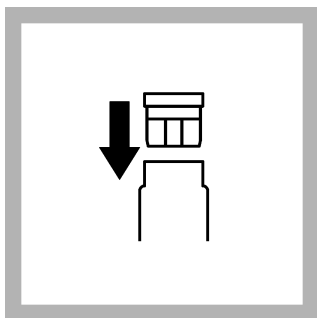
6. Mix and allow to stand for 25 minutes.



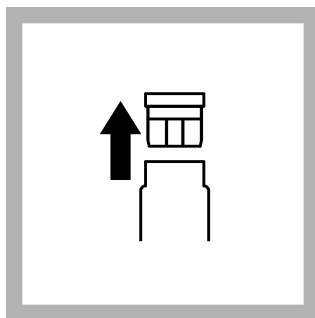
7. Open a round cuvette (LCW906).



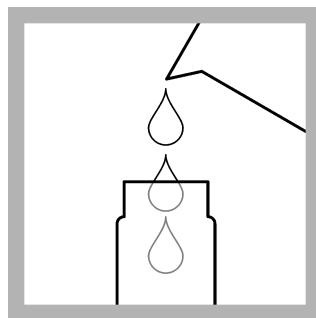
8. Fill the cuvette to maximum 1 cm below its mouth with the prepared sample.



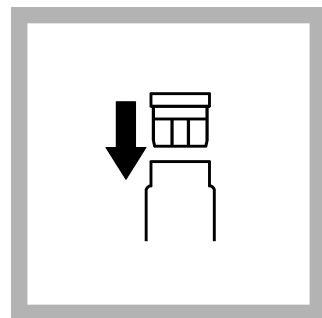
9. Close the cuvette.



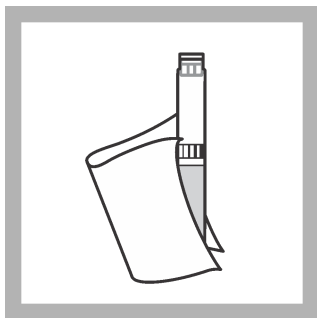
10. Blank-value cuvette preparation: Open a **second** round cuvette (LCW906).



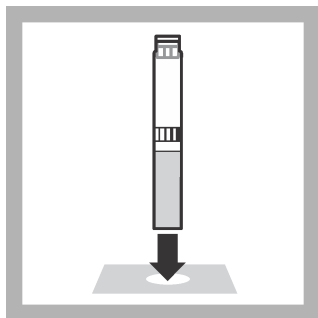
11. Fill the cuvette with double-distilled water.



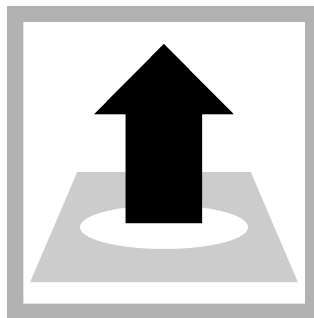
12. Close the cuvette.



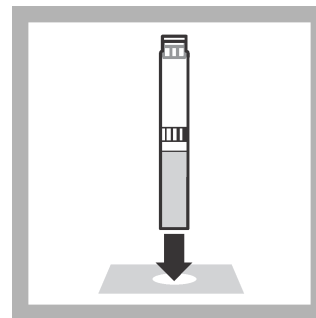
13. Thoroughly clean the outside of the cuvettes and evaluate.



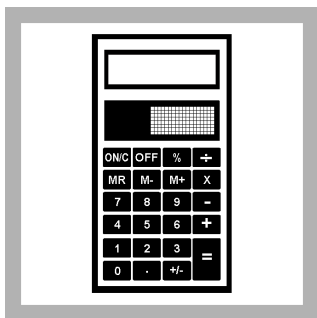
14. Insert the **blank-value cuvette** into the cell holder. Go to **Stored Programs**. Select the test. Push **ZERO**.



15. Remove the blank-value cuvette.



16. Insert the **sample cuvette** into the cell holder. Push **READ**.



17. Multiply the **result displayed** with **111.3**.

Interferences

Phosphates interfere with the determination.

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

Removal of Interferences

Phosphate interference can be eliminated by the addition of a spatula-tipfull of oxalic acid.

Summary of method

In an acidic solution, dissolved silicic acid or silicates react with ammonium molybdate to form a yellow-coloured silicomolybdic acid. If a reducing agent is added a blue dye is formed.



HACH LANGE GMBH
Willstätterstraße 11
D-40549 Düsseldorf

Tel. +49 (0) 2 11 52 88-0
Fax +49 (0) 2 11 52 88-143

info-de@hach.com
www.hach.com