LCW907 Organic complexing agents

DOC312.53.94366

Screening Test

LCW907

Scope and application: For water and wastewater.

Test preparation

Reagent storage

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

Before starting

Special note

Knowledge of whether organic complexing agents are present is of fundamental importance when analyzing heavy metals in waste water.

If such substances are present, the samples can only be determined after a sample preparation, because the complexed heavy metals are not detected with customary analytic methods and therefore lead to low-bias results.

This test is supposed to serve as an orientation aid when analyzing heavy metals in waste water.

The specimen can be measured visually or, for precise analyses, by photometer.

Visual measurement is the simplest way to make qualitative statement as to whether organic complexing agents are present in the waste water.

The greatest sensitivity is achieved with photometric measurement of the test.

0.1 mmoleq NTA corresponding to

– 5.2 mg/L Cr

– 6.3 mg/L Cu

– 5.8 mg/L Ni

– 6.5 mg/L Zn

To determine the total metal content the sample can be quickly and easily digested with the LCW902 Crack-Set.

The Crack-Set was specially developed for the wastewater sector of the metal-working industry with respect to the problem described above.

Therefore, it should always be in easy reach at plants producing waste water that contains metals.

Evaluation

A: Visual

Compare the coloring in the sample cuvette with that of the blank-value cuvette. A clear decrease in the red color, down to a pure yellow, indicates organic complexing agents.

Make use of LCW902 Crack-Set for a more precise analysis of the water sample.

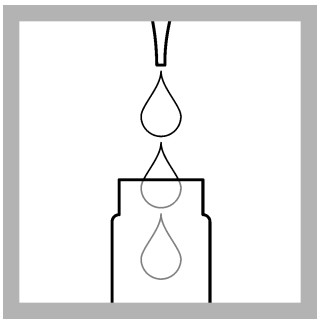
B: Measurement by Photometer, refer to: Procedure on page 2

Review safety information and expiration date on the package.

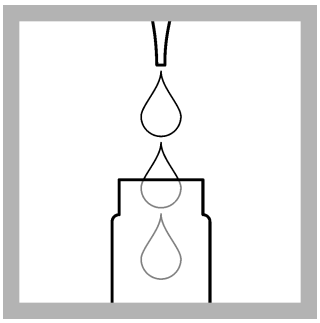
Review the Safety Data Sheets (MSDS/SDS) for the chemicals that are used. Use the recommended personal protective equipment.

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.

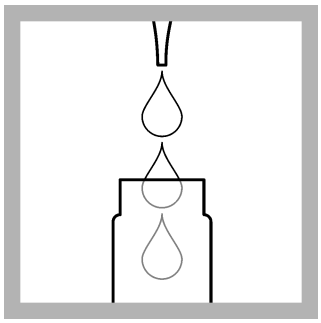
Procedure



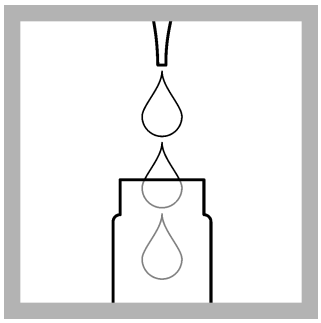
1. Blank value cuvette preparation: Carefully pipet **2.0 mL** of **solution A** in one of the enclosed cuvettes.



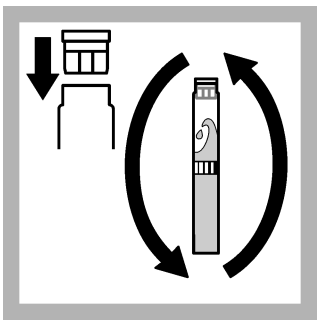
2. Carefully pipet **3.0 mL** of **distilled water** into the same cuvette (blank value cuvette).



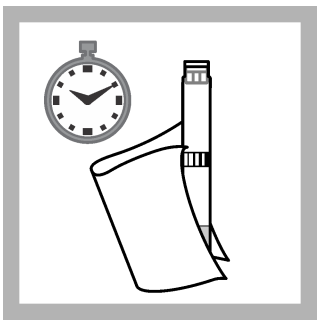
3. Sample cuvette preparation: Carefully pipet **2.0 mL** of **solution A** in the second of the enclosed cuvettes.



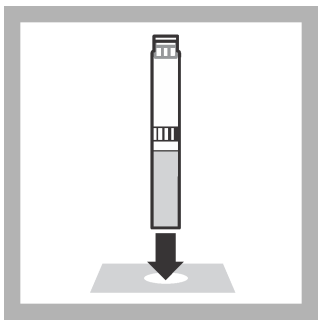
4. Carefully pipet **3.0 mL** of **water sample** into the same cuvette (sample cuvette).



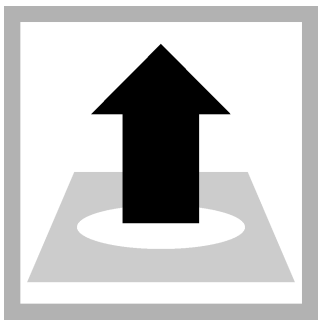
5. Close the cuvettes and invert a few times.



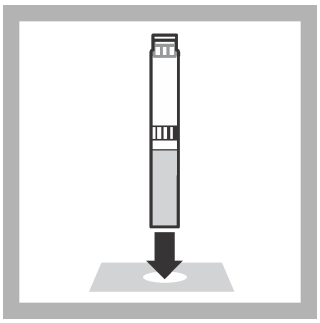
6. After **5 minutes**, thoroughly clean the outside of the cuvettes and evaluate.



7. Insert the **blank value cuvette** into the cell holder. Go to **Stored Programs**. Select the test, push **ZERO**.



8. Remove the cuvette.



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

Interferences

Fe^{3+} interfere with the determination even at low concentrations and can be masced by the addition (of a spatula-tipful) of ascorbic acid.

Some free, non-complexed, heavy-metal ions lead to interference.

The test should be made after elimination of the heavy metal detoxication.

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

Summary of method

Many organic complexers react with colored lake thereby decoloring it.

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