LCK 388 Carbonate total/carbon dioxide

DOC312.53.94102

55–550 mg/L CO_2 **LCK 388**

Scope and application: For wastewater, surface water and carbonated beverages.

Test preparation

Test storage

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

pH/Temperature

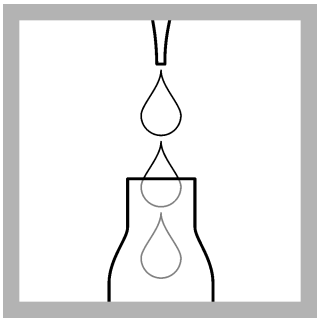
The pH of the water sample must be between pH 4–10.

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

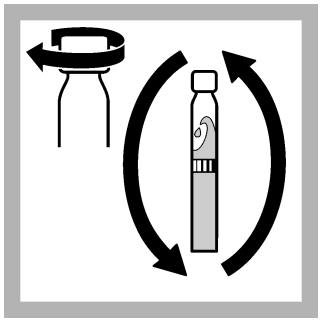
Before starting

Never leave cuvette open because carbon dioxide in the ambient air can cause high-bias results. Cuvettes must only be opened when necessary (e.g., to add sample) and must be closed or further processed immediately afterward.
Carry out each CO_2 determination in sequence to avoid contamination by ambient air.
Heat the thermostat to 100°C (212 °F) (Check the temperature—higher temperatures lead to dangerous excess pressure). When this temperature has been reached, insert the cuvette combinations and start the reaction time (60 minutes) again. Insert cuvette combinations only in the small shafts in the thermostat. Do not insert them in the large shaft with reducing sleeves.
Be sure to set the required temperature to 100 ºC (212 °F) (at 148 ºC (298.4 °F) the cuvette combinations may break apart).
Do not screw the cuvette combinations apart after the analysis has been completed, but press them back into the blister pack.

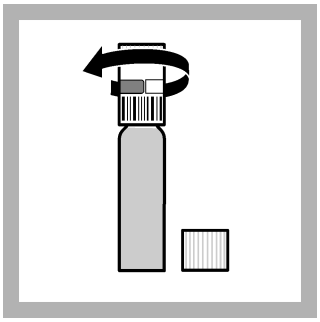
Procedure



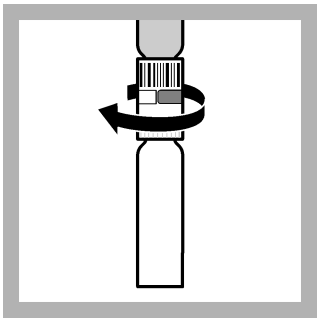
1. Pipette 1.0 mL of sample into the digestion cuvette.



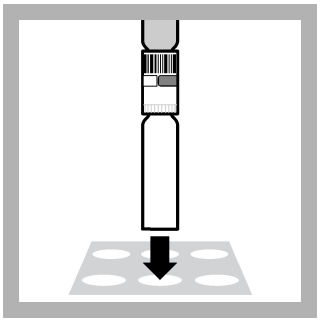
2. Close the cuvette with the original cap and invert a few times.



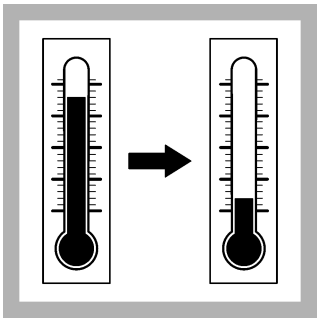
3. Close the indicator cuvette **very tightly** with the membrane double-cap (The barcode label must point toward the indicator cuvette).



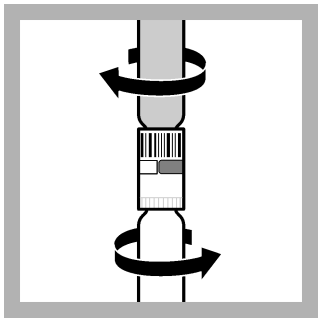
4. **Immediately** close the digestion cuvette tightly with the prepared indicator cuvette. Hold the cuvette combination vertically. **Do not invert**.



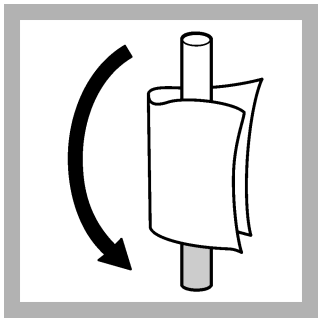
5. Heat in the preheated thermostat (blue indicator cuvette upwards) at 100 °C (212 °F) for 60 minutes.



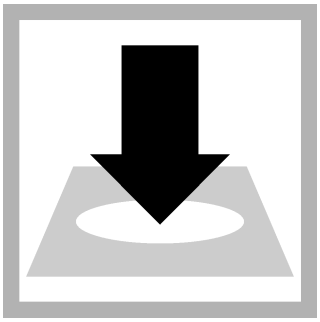
6. Allow to cool to room temperature.



7. Tighten the cuvette combination again before inverting it.



8. Invert cuvette combination, fully clean the indicator cuvette.



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

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.

Higher concentrations of these ions cause high-bias results. Only use double-distilled water that contains no carbon dioxide to dilute the sample.

Do a plausibility check on the measurement results (dilute and/or spike the sample).

800 mg/L	$HCOO^-$
500 mg/L	CH_3COO^-
60 mg/L	SO_3^{2-}
20 mg/L	S^{2-}
6 mg/L	NO_2–N

Summary of method

The reaction converts all carbonates and dissolved carbon dioxide (CO_2) into gaseous carbon dioxide (CO_2), which passes through a membrane into the indicator cuvette. The color change of the indicator is photometrically measured.

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