

Method Z630 – Carbon dioxide CO₂

Specification

Description:	Test for determining the content of carbon dioxide in fresh water
Range:	1 - 50 mg/l
Resolution:	0,25 mg/l
Wavelength:	610 nm
Extra feature:	exat:ir method guided by the innovative photometric system for easy and convenient titration, see 1.5 Titration method .

Reagent set

Product Code	Description	List of components
8630	Set of reagents for method Z630, Carbon dioxide CO ₂ fresh water (reagents for approx. 40 tests)* * for the average content of CO ₂ 20 mg/l	<ul style="list-style-type: none"> ✓ Reagent CO₂-1 ✓ Reagent CO₂-2 (2 pcs.) ✓ 1 ml syringe with tip ✓ vial

Performing the measurement

- Select the **Z630 Carbon dioxide CO₂** method (Methods → Select method → Z630 Carbon dioxide CO₂). How to select the method, see [8.1 Choosing method](#).

NOTE:

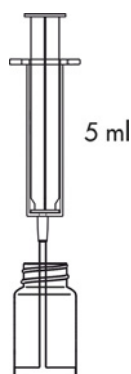
*It is recommended to use the GUIDE system by pressing the context button **GUIDE** on the photometer. It will provide you with step-by step basic instruction how to perform measurement and a timer with beeper to count down reaction time. To enable this function press the button **GUIDE**.*

- Rinse the vial and the syringe three times with the tested water.
- Add 7 drops of **Reagent CO₂-1** and shake to mix.

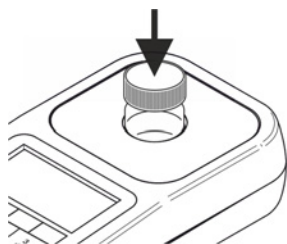
Take exactly 5 ml of the tested water with the syringe and pour into the vial.

NOTE:

Make sure no air bubbles are present in the syringe. Trapped air bubbles can affect accuracy of the measurement.



- Insert the vial into the round vial holder and press the **ZERO** key. The display will show "-0.0-", which means the device is ready for measurement.



25 03 21		12:35	
CO ₂	Z630 Carbon dioxide	tag 1	
Measuring ...			
ZERO	MEAS	GUIDE	

25 03 21		12:35	
CO ₂	Z630 Carbon dioxide	tag 1	
-0.0- mg/l			
ZERO	MEAS	GUIDE	

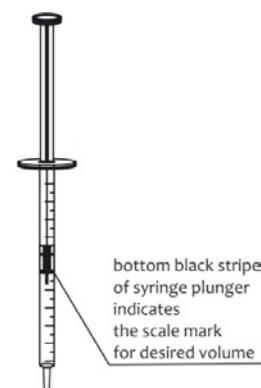
NOTE:

Before starting the measurement, it is highly recommended to make sure the test vial is clean and dry. Liquid residues remaining on the vial walls may adversely affect reliability of results.

- Replace the cap with a hole on the vial. Attach the tip on the end of the 1 ml syringe and take 1 ml of the **Reagent CO₂-2**. The bottom black stripe of the syringe plunger should be on the scale mark for the desired volume, see [18.3.1 Proper use of syringe](#).

NOTE:

Make sure no air bubbles are present in the syringe or in the tip. Trapped air bubbles can affect accuracy of the measurement.



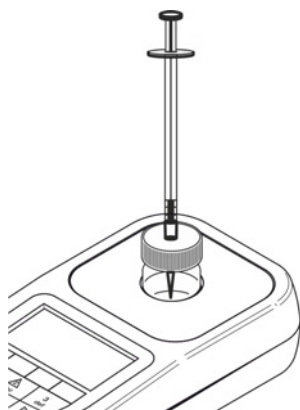
1 ml syringe

- Place the syringe with the Reagent CO₂-2 in the hole cap. Press the **MEAS** key and begin the titration by carefully adding **Reagent CO₂-2** in small portions. If the entire volume of the syringe is emptied and there is no end of titration, take another portion (1 ml) of Reagent CO₂-2 and continue titration.

NOTE:

To obtain accurate results of titration shake carefully the instrument with the vial after each portion of Reagent CO₂-2 is added to mix well.

The end of the titration is indicated by an acoustic signal and the message **STOP** appears on the instrument.



begin the titration

25 03 21		12:35	
CO ₂	Z630 Carbon dioxide	tag 1	
100	STOP	1.28 ml	
END	-	+	



the STOP message and an acoustic signal indicate the end of the titration

NOTE:

Remember not to switch off the beeper message before taking a measurement, see 12.7 Beeper. It will disable the acoustic signal which indicates the end of the titration.

7. Read the volume of added **Reagent CO₂-2** in ml on the syringe scale and enter the value using the „+“ button or any other key on the keyboard apart from the **Power key** and the **minus key**. Press the **END** key. The result – **the concentration of carbon dioxide** – is displayed in mg/l (ppm).

25 03 21		12:35	
CO ₂	Z630 Carbon dioxide tag1		
100	STOP	1.28 ml	
ZERO	END	-	+

25 03 21		12:35	
CO ₂	Z630 Carbon dioxide tag 1		
32.00 mg/l			
ZERO	MEAS	GUIDE	REC

Potential interferences

alkaline reaction of water

may cause false readings

The content of CO₂ in water of pH ≥ 8.3 is close to zero. In these conditions, measurements of CO₂ do not make sense.