

CW2050 Colorimeter for Chloride

● Operation



Switch the unit on using the ON/OFF switch

r1

The display shows the following:



Select analysis using the MODE key:
r1 → r2 → r1 (Scroll)

METHOD

The display shows the following:

Pour 1 ml of the water sample into a clean vial and fill to the 10 ml mark with deionized water. Replace the cap tightly and place the vial in the sample chamber with the ∇ vial marking aligned with the Δ housing marking.



Press the ZERO/TEST key.



The method symbol flashes for approx. 3 seconds.

0.0.0

The display shows the following:

After zero calibration is completed, remove the vial from the sample chamber. The characteristic coloration starts to appear after the addition of the reagent tablet(s). Replace the cap tightly and place the vial in the sample chamber with the ∇ and Δ marks aligned.



Press the ZERO/TEST key.



The method symbol flashes for approx. 3 seconds.

RESULT

The result appears in the display.

Repeating the analysis:

Press the ZERO/TEST key once again.

New zero calibration:

Press the MODE key until the desired method symbol appears in the display again.

● User messages

EOI

Light absorption too great. Reason - e.g. soiled lens.

+Err

Measuring range exceeded or excessive turbidity.

-Err

Result outside bottom measuring range limit.

LO BAT

Replace 9 V battery immediately; no further analysis possible.

● Technical data

Optics:	LED:λ = 528 nm
Battery:	9 V block battery (life = approx. 600 tests)
Auto-OFF:	auto unit switch-off approx. 5 minutes after a key was last pressed
Ambient conditions:	5-40°C 30-90% rel. humidity (non-condensing)
CE:	DIN EN 55 022, 61 000-4-2, 61 000-4-8, 50 082-2, 50 081-1, DIN V ENV 50 140, 50 204

● Chloride 0,5 - 25 mg/l

0.0.0

Perform zero calibration (see "Operation"). Adjust the sample temperature to 20°C ± 2 °C. Add one CHLORIDE T1 tablet straight from the foil to the prepared vial. Crush using a clean stirring rod and mix until all particles of the tablet have dissolved. Add one CHLORIDE T2 tablet straight from the foil to the same sample, crush and mix gently to dissolve. Ensure all particles are dissolved – Chloride causes an extremely finely distributed Turbidity with a milky appearance. Replace the cap tightly and place this vial in the sample chamber with the ∇ and Δ marks aligned.

Wait for a reaction time of 2 minutes!
(do not remove or shake the vial during this time)



Press the ZERO/TEST key.



The method symbol flashes for approx. 3 seconds.

RESULT

The result is shown in the display in mg/l Cl

Tolerance: ± 2,5 mg/l.

● Chloride 5 - 250 mg/l

r2

The display shows the following:

Pour 1 ml of the water sample into a clean vial and fill to the 10 ml mark with deionized water. Replace the cap tightly and place the vial in the sample chamber with ∇ and Δ marks aligned.



Press the ZERO/TEST key.



The method symbol flashes for approx. 3 seconds.

0.0.0

The display shows the following:

Adjust the sample temperature to 20°C ± 2 °C. Add one CHLORIDE T1 tablet straight from the foil to the prepared vial. Crush using a clean stirring rod and mix until all particles of the tablet have dissolved. Add one CHLORIDE T2 tablet straight from the foil to the same sample, crush and mix gently to dissolve. Ensure all particles are dissolved – Chloride causes an extremely finely distributed Turbidity with a milky appearance. Replace the cap tightly and place this vial in the sample chamber with the ∇ and Δ marks aligned.

Wait for a reaction time of 2 minutes!
(do not remove or shake the vial during this time)



Press the ZERO/TEST key.



The method symbol flashes for approx. 3 seconds.

RESULT

The result is shown in the display in mg/l Cl

Tolerance: ± 25 mg/l.

● Troubleshooting: Guidelines for photometric measurements

1. Vials, caps and stirring rods should be cleaned thoroughly after each analysis to prevent errors being carried over. Even minor reagent residues can cause errors in the test results. Use the brush provided for cleaning.
2. The outside of the vial must be clean and dry before starting the analysis. Clean the outside of the vials with a towel. Fingerprints or other marks will be removed.
3. Zero calibration and test must be carried out with the same vial as there may be slight differences in optical performance between vials.
4. The vials must be positioned in the sample chamber for zero calibration and test with the Δ-mark on the vial aligned with the ∇-mark on the instrument.
5. Always perform "Zero calibration" and "Test" with closed vial lid.
6. Bubbles on the inside walls of the vial lead to incorrect measurements. To prevent this, remove the bubbles by swirling the vial before performing the test.
7. Avoid spillage of water or reagent solution in the sample chamber. If water should leak into the photometer housing, it can damage electronic components and cause corrosion.
8. Soiling of the lens (LED and photosensor) in the sample chamber leads to incorrect measurements. Check - and if necessary clean - the light entry surfaces of the sample chamber at regular intervals. Clean using a moist cloth and cotton buds.
9. Always add the reagent tablets to the water sample straight from the foil without touching them with your fingers.
10. Large temperature differentials between the photometer and the operating environment can lead to incorrect measurement due to the formation of condensate in the area of the lens or on the vial (e.g).
11. To avoid errors caused by stray-light do not use the instrument in bright sunlight.

● Notes

1. High concentrations of electrolytes and organic compounds have different effects on the precipitation reaction.
2. Ions which also form deposits with silver nitrate in acidic media, such as bromides, iodides and thiocyanates, interfere with the analysis.
3. Highly alkaline water should - if necessary - be neutralised using nitric acid before the reaction is performed using the reagent tablet.

● Method notes

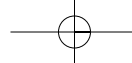
Observe application options, analysis regulations and matrix effects of methods. Reagent tablets are designed for use in chemical analysis only and should be kept well out of the reach of children.

If necessary, request safety data sheets.
Ensure proper disposal of reagent solutions.

● Replacement Reagents

Chloride T1 tablet pk 100
Ref: TT/51.59.00

Chloride T2 tablet pk 100
Ref: TT/51.59.20



● Calibration mode

Mode Press MODE key and keep it depressed .

Power Switch unit on using ON/OFF key. Release MODE key after approx. 1 second.

CAL
r1 The display shows the following in alternating mode:

Zero Test Perform zero calibration (see "Operation"). Press the ZERO/TEST key.

METHOD The method symbol flashes for approx. 3 seconds.

0.0.0
CAL The display shows the following in alternating mode:

Zero Test Place the calibration standard to be used in the sample chamber with the Δ and ▽ marks aligned. Press the ZERO/TEST key.

METHOD The method symbol flashes for approx. 3 seconds.

RESULT
CAL The result is shown in the display, alternating with CAL.

If the result displayed corresponds with the value of the calibration standard (within the tolerance quoted), exit calibration mode by pressing the ON/OFF key.

Mode Otherwise, pressing the MODE key once increases the displayed value by 1 digit.

Zero Test Pressing the ZERO/TEST key once decreases the displayed value by 1 digit.

CAL
RESULT + x Pressing the relevant key until the displayed value equals the value of the calibration standard.

Power By pressing the ON/OFF key, the new correction factor is calculated and stored in the user calibration software.

: **:** Confirmation of calibration (3 seconds).

● Note

It is not necessary to make a calibration of the r2-range as the software refer to the calibration of the r1-range.

CAL Factory calibration active.

cAL Calibration has been set by the user.

● Recommended calibration value

Chloride: between 10 and 20 mg/l Cl

- User calibration : cAL
- Factory calibration : CAL

The unit can be reset to delivery condition (factory calibration) as follows:

Mode **Zero Test** Press MODE and ZERO/TEST together and hold depressed .

Power Switch the unit on using the ON/OFF key. Release MODE and ZERO/TEST keys after approx. 1 second.

The following messages appear in the display in alternating mode:

SEL The unit is in delivery condition.
CAL (SEL stands for Select)

or:

SEL The unit operates with a calibration performed by the user. (If the user calibration is to be retained, switch the unit off using the ON/OFF key.)
cAL

Mode Factory calibration is activated by pressing the MODE key. The following messages appear in alternating mode in the display:

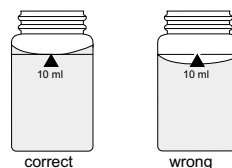
SEL
CAL

Power Switch the unit off using the ON/OFF key.

● Bediener-Hinweise

- E 10** Calibration factor "out of range"
- E 70** Factory calibration not OK / deleted
- E 71** User calibration not OK / deleted

● Correct filling of the vial



Camlab Water CW2050 Chloride Colorimeter

Reference CW/20.71.00



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