

1.14434.0001

MColorTest™

Chlorine Test

Cl₂

for the determination of free chlorine

1. Method

Determination with color-card comparator

In weakly acidic solution free chlorine reacts with diethyl-p-phenylenediamine (DPD) to form a red-violet dye. The chlorine concentration is measured **semi-quantitatively** by visual comparison of the color of the measurement solution with the color fields of a color card.

2. Measuring range and number of determinations

Measuring range / color-scale graduation	Number of determinations
0.010 - 0.025 - 0.045 - 0.06 - 0.08 - 0.10 - 0.15 - 0.20 - 0.30 mg/l Cl ₂	400

3. Applications

Sample material:

Drinking water and mineral water
Waters from aquaculture
Wastewater
Electroplating wastewater
Disinfectant solutions
This test is **not suited** for seawater.

4. Influence of foreign substances

This was checked in solutions containing 0.2 mg/l Cl₂. The determination is not yet interfered with up to the concentrations of foreign substances given in the table.

Concentrations of foreign substances in mg/l or %					
Al ³⁺	100	Mn ²⁺	100	Br ₂	0.1
Ca ²⁺	1000	NO ₂ ⁻	0.01	ClO ₂	0.1
CN ⁻	0.01	S ²⁻	0.1	I ₂	0.1
CO ₃ ²⁻	1000			H ₂ O ₂	0.01
Cr ³⁺	10			O ₃	0.01
Cr ₂ O ₇ ²⁻	0.1			NaCl	5 %
Cu ²⁺	1			NaNO ₃	5 %
Fe ³⁺	1			Na ₂ SO ₄	1 %

5. Reagents and auxiliaries

The test reagent is stable up to the date stated on the pack when stored closed at +15 to +25 °C.

Package contents:

2 bottles of reagent Cl₂-1
2 test tubes with screw caps (in comparator block)
1 color card

Other reagents and accessories:

MColorpHast™ Universal indicator strips pH 0 - 14, Cat. No. 109535
Sodium hydroxide solution 1 mol/l TitriPUR®, Cat. No. 109137
Sulfuric acid 0.5 mol/l TitriPUR®, Cat. No. 109072

MColorTest™ Flat-bottomed long tubes with screw caps for MColorTest™ with color-card comparator (12 pcs), Cat. No. 114901

Refill pack:

Cat. No. 114977

Chlorine Test

Refill pack for 114976 and 114434

(Reagent **without technical accessories** for 1000 determinations)

6. Preparation

- Analyze **immediately after sampling!**
- The pH must be within the range 4 - 8.
Adjust, if necessary, with sodium hydroxide solution or sulfuric acid.
- Filter turbid samples.

7. Procedure

Open the box and set up with both test tubes **on the left**.Unfold the color card and insert it, colored end first, into the slit at the lower **right-hand** edge of the box.

	Measurement sample tube nearer to the tester (A)	Blank tube farther from the tester (B)	
Pretreated sample (5 - 40 °C)	20 ml	20 ml	Fill the test tube to the mark (= 20 ml).
Reagent Cl ₂ -1	1 level blue microspoon (in the cap of the Cl ₂ -1 bottle)	-	Add, close the tube, and shake vigorously until the reagent is completely dissolved .

Slide the color card through to the left until the closest possible color match is achieved between the two open test tubes when viewed from above.

Read off the result in mg/l Cl₂ (free chlorine) from the color card at the lower right-hand edge of the box.

Notes on the measurement:

- The color of the measurement solution remains stable for only a short time.
- Turbidity in the measurement solution makes the color comparison more difficult.
- If the color of the measurement solution is equal to or more intense than the darkest color on the scale, repeat the measurement using **fresh**, diluted samples until a value of less than 0.30 mg/l Cl₂ is obtained.
- In the event of chlorine concentrations exceeding 12 mg/l, other reaction products are formed and false-low readings are yielded. In such cases it is advisable to conduct a plausibility check of the measurement results by diluting the sample (1:100, 1:1000).
- Concerning the result of the analysis, the dilution must be taken into account:

Result of analysis = measurement value x dilution factor

8. Method control

To check test reagent, measurement device, and handling:

Freshly prepare a chlorine standard solution containing 0.10 mg/l Cl₂ (application see the website) and **immediately** analyze as described in section 7. Additional notes see under www.qa-test-kits.com.

9. Notes

- Reclose the reagent bottle immediately after use.
- Rinse the test tubes **with distilled water only**.
- Information on disposal can be obtained at www.disposal-test-kits.com.

