# *NANOCOLOR*® Chlorine / Ozone 2

REF: 985017

en

## Overview

The test is suitable for the photometric determination of chlorine / ozone. The test is in accordance with APHA 4500-Cl G, DIN ISO 7393-2.

The test is suitable for surface water, ground and drinking water.

- Measuring range:

0.05–2.50 mg/L $Cl_2$ (method 0171 / 0172)

0.05–2.00 mg/L $O_3$ (method 0173)

0.09–4.80 mg/L $ClO_2$ (method 0174)

- Number of tests: 20
- Wavelength for photometric determination: 540 nm
- Shelf life: 12 months
- Reaction time: 1 / 3 ($Cl_2$ gesamt) / 2 ($O_3$) / 1 ($ClO_2$) minutes
- Storage temperature: 15–25 °C
- Storage conditions: upright

## Method

Photometric determination with DPD (N,N-diethyl-1,4-phenylendiamine) to produce a red violet dye.

## Interferences

Too high concentrations may lead to a result that lies below the actual value: > 20 mg/L

The method can be applied for analyzing seawater.

## Reagents and accessories

### Contents of reagents set:

- 20 test tubes R0
- 1 reagent R2

### Required devices:

- MACHEREY-NAGEL photometer
- Digital piston pipette 1–5 mL (REF 916909) with pipette tips (REF 916916)

## Standards

- *NANOCONTROL* Chlorine (REF 92517)

## Sampling and preparation

See DIN EN ISO 5667-3-A 21.

Adjust to pH 3–10 prior to analysis.

## Quality control

The measurement of a blank value and a standard is recommended before every measuring series as quality control measure.

### Quality data:

The following data were determined during production according to ISO 8466-1 and DIN 38402-A51:

- Number of LOTs: 33
- Standard deviation of the method: ± 0.02 mg/L $Cl_2$
- Coefficient of variation of the process: ± 1.57 %
- Confidence interval: ± 0.05 mg/L $Cl_2$

### Specified data for procedure:

- Sensitivity (absorbance of 0.010 A corresponds to): ± 0.03 mg/L $Cl_2$
- Accuracy of a measurement value: ± 0.06 mg/L $Cl_2$

LOT-specific certificates are available at *www.mn-net.com*.

## Procedure

### Free chlorine / chlorine dioxide

1. Open test tube
2. Pipette 4 mL of sample into test tube
3. Seal test tube and shake vigorously
4. Remove any air bubbles by slowly turning the cuvette
5. Wait 1 min
6. Clean outside of test tube
7. Measure [method 0171 or 0174]

### Total chlorine

Immediately after measuring the free chlorine:

1. Open test tube
2. Add 3 drops of R2
3. Seal test tube and shake vigorously
4. Wait 2 min (only total chlorine: 3 min)
5. Clean outside of test tube
6. Measure [method 0172]

### Ozone

1. Open test tube
2. Add 3 drops of R2
3. Add test solution as far as the lower edge of the printing (= 5 mL)
4. Seal test tube and shake vigorously
5. Wait 2 min
6. Clean outside of test tube
7. Measure [method 0173]

## Notes

When using other photometers, make sure measurements are possible in test tubes (16 mm OD) and calibrate the method.

Correction value e. g. for colored or turbid samples possible (see photometer manual).

Conversion: 0.10 mg/L $Cl_2$ = 0.19 mg/L $ClO_2$ = 0.15 mg/L $OCl^-$ = 0.21 mg/L NaOCl = 0.23 mg/L $Br_2$ = 0.36 mg/L $I_2$

For the determination of chlorine and ozone together, please request special instruction.

Determination of bromine together with chlorine: To eliminate chlorine, add 1 small measuring spoon (approx. 20 mg) of glycine to 25 mL test solution and dissolve by swirling. This solution can then be used for the bromine determination. The conversion factor for $I_2$ mg/L to $Br_2$ mg/L is 2.25.

Information regarding safety can be found on the box' label and in the safety data sheet. You can download the SDS from *www.mn-net.com/SDS*.

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