

REF 985 023

en

Test 0-23

07.11

**NANOCOLOR®** COD 10000

Chemical Oxygen Demand

#### Method:

Photometric determination of chromium(III) concentration after two hours of oxidation with potassium dichromate / sulfuric acid / silver sulfate at 148 °C

Range:	1.00–10.00 g/L COD (1000–10000 mg/L COD)
Factor:	06.40
Wavelength (HW = 5–12 nm):	620 nm
Reaction time:	2 h
Reaction temperature:	148 °C

#### Contents of reagent set:

20 test tubes COD 10000

1 test tube with blank value "NULL"

#### Hazard warning:

Test tubes contain sulfuric acid 63 %, mercury(II) sulfate < 0.5% Hg and potassium dichromate < 0.5% Cr.

R45 May cause cancer. R46 May cause heritable genetic damage. R20/21/22 Harmful by inhalation, in contact with skin and if swallowed. R33 Danger of cumulative effects. R35 Causes severe burns. R42/43 May cause sensitization by inhalation and skin contact. R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in aquatic environment. S13 Keep away from food, drink and animal feedingstuffs. S26/28 In case of contact with the eyes or skin, rinse thoroughly with plenty of water and seek medical advice. S53 Avoid exposure – obtain special instructions before use. S60 The test tubes must be disposed of as hazardous waste. S61 Avoid release into the environment. Refer to special instructions/safety data sheets. When shaking COD test tubes use safety bottle (REF 916 37).

#### Interferences:

For **chloride contents above 3000 mg/L** the test sample must be diluted or use Chloride complexing agent (REF 918 911). For determination of the concentration of chlorides we recommend a preliminary test with QUANTOFIX® Chloride (500–3000 mg/L, REF 913 21). Turbidity in the COD test tube after reaction in the heating block will result in COD readings which are too high. Wait until turbidities caused by precipitation of mercury sulfate have deposited.

The method can not be applied for the analysis of sea water.

#### Procedure:

Requisite accessories: NANOCOLOR® heating block, piston pipette with tips

**Note:** For samples with high chloride concentrations it is important to shake the test tube **before** the water sample is added in order to suspend the deposit.

Open test tube, hold it **diagonally** and **slowly** add **1.0 mL** test sample; screw cap securely on to test tube, hold tube by the cap, place tube into the safety bottle and shake, then place tube into the heating block. After 2 h remove test tube from heating block, after 10 min (*test tube is still warm*) shake once and allow to cool to room temperature. Clean outside of test tube and measure.

#### Measurement:

For NANOCOLOR® photometers and PF-11 / PF-12 see manual, test 0-23.

#### Photometers of other manufacturers:

For other photometers check whether measurement of round glass tubes is possible. Verify factor for each type of instrument by measuring standard solutions.

#### Analytical quality control:

NANOCONTROL COD 15000 (REF 925 28) or Multistandard Seepage water (REF 925 013)

#### Storage:

Store the test kit in a cool and dry place. Avoid exposing the test kit to sunlight.

#### References:

German standard methods for the examination of water, waste water and sludge (DIN 38 409 - H41-1)

British standard: Field and on-site test methods for the analysis of waters (BS 1427)