

REF 985 011

en

Test 0-11

03.11

NANOCOLOR® COD 4000

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:	400–4000 mg/L COD
Factor:	5600.
Wavelength (HW = 5–12 nm):	620 nm
Reaction time:	2 h
Reaction temperature:	148 °C

Contents of reagent set:

20 test tubes COD 4000

Hazard warning:

Test tubes contain sulfuric acid 51–80 %, potassium dichromate 0.28–0.56 % and mercury(II) sulfate 0.37–0.74 %.

H314, H340, H350, EUH203 Causes severe skin burns and eye damage. May cause genetic defects. May cause cancer. Contains chromium(VI). May produce an allergic reaction. P201, P202, P280, P301+330+331, P303+361+353, P304+340, P305+351+338, P308+313, P405 Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves / eye protection. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Remove / Take off immediately all contaminated clothing. Rinse skin with water / shower. IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice / attention. Store locked up. For further information ask for a safety data sheet. 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-12 see manual, test 0-11.

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:

NANOCNTROL COD 15000 (REF 925 28) or Multistandard Seepage water (REF 925 013) after dilution (1 + 1) with distilled water: 2000 mg/L COD

Confidence interval: 1800–2200 mg/L COD

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)