# visocolor® ECO

en

# Chromium(VI)

## Test kit for performing colorimetric tests on chromium(VI) in surface water and sewage

**Method:**
In an acidic medium chromate ions react with diphenylcarbazide to form a red-violet dye. First chromium(VI) oxidizes diphenylcarbazide to diphenylcarbazone, being itself reduced to chromium(III). Combined with the enol form of the carbazone, these chromium(III) ions form the intensively colored complex.

**Measurement range:**
0.02–0.50 mg/L Cr(VI)

**Contents of test kit (*refill pack):**
sufficient for 140 tests
- 30 mL Cr-1*
- 25 mL Cr-2*
- 2 screw-plug measuring glasses
- 1 slide comparator
- 1 color chart
- 1 plastic syringe 5 mL
- 1 instructions for use*

**Hazard warning:**
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***.

**Procedure:**

**a) colorimetric determination with color chart**
*also refer to the pictogram on the back of the color chart*

1. Pour a **5 mL water sample** into each of the measuring glasses using the plastic syringe.
   Place a measuring glass on position A in the comparator.

**Only add the reagent to measuring glass B.**

2. Add **5 drops of Cr-1**. Seal the glass and mix.
3. Add **5 drops of Cr-2**. Seal the glass and mix.
4. Open the glass after **3 min** and place it on position B in the comparator.
5. Slide the comparator until the colors match in the inspection hole on top. Check the measurement reading in the recess on the comparator reed. Mid-values can be estimated.
6. After use, rinse out both measuring glasses thoroughly and seal them.

**b) photometric determination**
The reagents are also suitable for **photometric evaluation**. Please refer to the separate instructions for photometric performance.
The method can also be applied for the analysis of sea water.

**Disposing of the samples:**
Information regarding disposal can be found in the safety data sheet. You can download the SDS from ***www.mn-net.com/SDS***.

**Interferences:**
Only chromium(VI) can be determined with this test kit. Chromium(III) must first be oxidized (see below determination of total chromium).
Larger quantities of heavy metal ions interfere.

**Conversion table:**

| mg/L Cr(VI) | mg/L $CrO_4^{2-}$ |
|---|---|
| 0.02 | 0.04 |
| 0.05 | 0.11 |
| 0.10 | 0.22 |
| 0.15 | 0.33 |
| 0.20 | 0.45 |
| 0.30 | 0.67 |
| 0.40 | 0.89 |
| 0.50 | 1.12 |

**Determination of total chromium:**
Add to 20 mL test sample 1 mL sulfuric acid 96 % and 0.5 g potassium peroxodisulfate and boil for 2 h. After cooling add approximately 10 mL of distilled water and carefully adjust to pH 1–3 with 5 mL of sodium hydroxide solution 20 %. Then fill up to 50 mL and determine the chromium concentration as described above. Multiply the read-off value with **2.5**.

**Note:**
For the determination of water-soluble chromium(VI) in cement contact MACHEREY-NAGEL for special working instructions.

**Storage:**
Store the test kit in a cool (< 25 °C) and dry place.

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