

**visocolor<sup>®</sup> ECO**

# 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](http://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](http://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 <sub>4</sub> <sup>2-</sup>
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 peroxydisulfate 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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