visocolor® ECO
Manganese

Test kit for performing colorimetric tests on mangenese ions in surface water and sewage

Method:
Determination of total manganese with formaldoxime

Measurement range:
0.1–1.5 mg/L Mn

Contents of test kit (*refill pack):
sufficient for 70 tests
- 30 mL Mn-1*
- 30 mL Mn-2*
- 4 g Mn-3*
- 1 measuring spoon 70 mm*
- 2 screw-plug measuring glasses
- 1 slide comparator
- 1 color chart
- 1 plastic syringe 5 mL
- 1 instructions for use*

Hazard warning:
Reagent Mn-1 contains paraformaldehyde 1–10 % and hydroxylammonium chloride 5–10 %, reagent Mn-2 contains ammonia 5–10 %.
H314, H317, H351 Causes severe skin burns and eye damage. May cause an allergic skin reaction. Suspected of causing cancer.
P201, P202, P260, P261, P272, P280, P301+330+331, P302+352, P303+361+353, P304+340, P305+351+338, P308+313, P333+313, P363, P405 Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe vapors. Avoid breathing dust. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves / eye protection. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN: Wash with plenty of soap and water. 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. If skin irritation or rash occurs: Get medical advice / attention. Wash contaminated clothing before reuse. Store locked up. For further information ask for a safety data sheet.

Instructions for use:
also refer to the pictogram on the back of the color chart

1. Pour a **5 mL water sample** *(the pH value of the sample must be between pH 1 and 13)* 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 Mn-1**, seal the glass and mix.
3. Add **7 drops of Mn-2**, seal the glass and mix. Wait **1 min**.
4. Add **1 level measuring spoonful of Mn-3**, seal the glass and shake well.
5. Open the glass after **5 min** and place it on position B in the comparator.
6. 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.
7. After use, rinse out both measuring glasses thoroughly and seal them.

The reagents can be used for the **photometric evaluation** with photometer PF-11 / PF-12.

The method can be applied also for the analysis of sea water.

Disposing of the samples:
The used analysis specimens can be flushed down the drain with tap water and channelled off to the local sewage treatment works.

Interferences:
The following ions will not interfere:
≤ 0,1 mg/L Ni^{2+}; ≤ 2 mg/L Cr, Co^{2+}; ≤ 20 mg/L Cu^{2+}, Fe^{3+};
≤ 50 mg/L Al^{3+}, PO_4^{3-}

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

Product data and ordering information	
REF	**931 037 (931 237)**
Type	**colorimetric test kit (refill pack)**
Range	**0 · 0.1 · 0.2 · 0.3 · 0.5 · 0.7 · 1.0 · 1.5 mg/l (ppm) Cu^{2+}**
Sufficient for	**100 determinations**
Shelf life	**at least 2 years**
Sea water suitability	**yes**
Detectable with PF-12	**yes**

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