visocolor® ECO

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Cyanide

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

Method:
Cyanide ions react with chloramine T to form cyanogen chloride. Combined with isonicotinic acid and 1,3-dimethylbarbituric acid, this forms a blue polymethine dye. The method identifies free cyanide and cyanide complexes that are decomposed by chlorine.

Measurement range:
0.01–0.20 mg/L CN^-

Contents of test kit (*refill pack):
sufficient for 100 tests

19 mL CN-1*
4 g CN-2*
28 mL CN-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 CN-2 contains chloramine T 5–10 %, reagent CN-3 contains sodium hydroxide solution 0.5–2 %.
H314, H334 Causes severe skin burns and eye damage. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
P260, P261, P280, P301+330+331, P303+361+353, P304+340, P305+351+338, P342+311 Do not breathe vapors. Avoid breathing dust. 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 experiencing respiratory symptoms: Call a POISON CENTER or doctor / physician. 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 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 CN-1**, seal the glass and mix.
3. Add **1 level measuring spoonful of CN-2**, seal the glass and dissolve by swirling.
4. Add **5 drops of CN-3**, seal the glass and mix.
5. Open the glass after **15 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 after dilution (1+3).

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:
Complexed cyanide is not or not completely detected. Reducing agents interfere since they react with the chlorinating agent. Thiocyanate, sulfide, bromide and iodide interfere even in low concentrations (> 0.1 mg/L).

The following ions will not interfere:
< 1000 mg/L Ca^{2+}, Mg^{2+}, Zn^{2+}, Cl^-, F^-, PO_4^{3-}, SO_4^{2-}; < 200 mg/L Cd^{2+};
< 50 mg/L NO_2^-; < 20 mg/L Cr(III), Fe^{3+}; < 10 mg/L Al^{3+}, Mn^{2+};
< 5 mg/L Cr(VI), Cu^{2+}; < 1 mg/L Ni^{2+}

To circumvent interferences readily liberated cyanide is separated by destillation before determination *(see „Note")*.

Note:
For the determination of readily liberated cyanide and total cyanide as well as for the determination of cyanide in stone-fruit spirits, please contact MACHEREY-NAGEL for special working instructions.

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

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