

# 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<sup>-</sup>

**Contents of test kit (\*refill pack):**

sufficient for 100 tests

- 19 ml CN-1\*
- 4 ml CN-2\*
- 28 ml CN-3\*
- 1 measuring spoon 70 mm\*
- 2 screw-plug measuring glasses
- 1 slide comparator
- 1 colour chart
- 1 plastic syringe 5 ml
- 1 instructions for use\*

**Hazard warning:**

CN-2 contains chloramine T 6%. CN-3 contains sodium hydroxide solution < 2%. **May cause sensitisation by inhalation. Irritating to eyes and skin.** Keep container tightly closed. Do not breathe dust. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable gloves and eye/face protection. For further information please ask for safety data sheets.

**Instructions for use:**

*also refer to the pictogram on the back of the colour 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 colours 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.

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, sulphide, bromide and iodide interfere even in low concentrations (> 0.1 mg/l).

The following ions will not interfere:

< 1000 mg/l Ca<sup>2+</sup>, Mg<sup>2+</sup>, Zn<sup>2+</sup>, Cl<sup>-</sup>, F<sup>-</sup>, PO<sub>4</sub><sup>3-</sup>, SO<sub>4</sub><sup>2-</sup>; < 200 mg/l Cd<sup>2+</sup>;  
< 50 mg/l NO<sub>2</sub><sup>-</sup>; < 20 mg/l Cr(III), Fe<sup>3+</sup>; < 10 mg/l Al<sup>3+</sup>, Mn<sup>2+</sup>;  
< 5 mg/l Cr(VI), Cu<sup>2+</sup>; < 1 mg/l Ni<sup>2+</sup>

To circumvent interferences readily liberated cyanide is separated by distillation 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.