

1.10044.0001

MQuant™

## Cyanide Test

CN<sup>-</sup>

## 1. Method

Cyanide ions react with a chlorinating agent to form cyanogen chloride, which in turn reacts with 1,3-dimethylbarbituric acid in the presence of pyridine to form a violet dye (König reaction). The cyanide concentration is measured **semiquantitatively** by visual comparison of the reaction zone of the test strip with the fields of a color scale.

## 2. Measuring range and number of determinations

Measuring range / color-scale graduation	Number of determinations
1 - 3 - 10 - 30 mg/l CN <sup>-</sup>	100

## 3. Applications

This test measures only cyanide ions (free cyanide).

## Sample material:

Wastewater, especially from the electroplating industry

## 4. Influence of foreign substances

This was checked in solutions with 3 and 0 mg/l CN<sup>-</sup>. The determination is not yet interfered with up to the concentrations of foreign substances given in the table.

Concentrations of foreign substances in mg/l					
Ag <sup>+</sup>	1	Fe <sup>2+</sup>	1000	Ni <sup>2+</sup>	1000
Al <sup>3+</sup>	1000	Fe <sup>3+</sup>	1000	NO <sub>2</sub> <sup>-</sup>	50
Ba <sup>2+</sup>	1000	Hg <sup>+</sup>	1	NO <sub>3</sub> <sup>-</sup>	1000
Br	5	Hg <sup>2+</sup>	1	Pb <sup>2+</sup>	1000
Ca <sup>2+</sup>	1000	I <sup>-</sup>	5	PO <sub>4</sub> <sup>3-</sup>	1000
Cd <sup>2+</sup>	1000	K <sup>+</sup>	1000	S <sup>2-</sup>	100
Cl <sup>-</sup>	1000	Mg <sup>2+</sup>	1000	SCN <sup>-</sup>	1
Co <sup>2+</sup>	1000	MnO <sub>4</sub> <sup>-</sup>	50	SO <sub>4</sub> <sup>2-</sup>	1000
CrO <sub>4</sub> <sup>2-</sup>	50	Na <sup>+</sup>	1000	Zn <sup>2+</sup>	1000
Cu <sup>2+</sup>	1	NH <sub>4</sub> <sup>+</sup>	1000		

## 5. Reagents and auxiliaries

## Please note the warnings on the packaging materials!

The test strips and test reagents are stable up to the date stated on the pack when stored closed at +15 to +25 °C.

## Package contents:

Tube containing 100 test strips  
1 bottle of reagent CN-1  
1 bottle of reagent CN-2  
1 red dosing spoon  
1 test vessel

## Other reagents:

MColorpHast™ Universal indicator strips pH 0 - 14,  
Cat. No. 109535  
Sodium hydroxide solution 1 mol/l TitriPUR®,  
Cat. No. 109137  
Sulfuric acid 0.5 mol/l TitriPUR®, Cat. No. 109072  
Cyanide standard solution CertiPUR®, 1000 mg/l CN<sup>-</sup>,  
Cat. No. 119533

## 6. Preparation

- Samples containing more than 30 mg/l CN<sup>-</sup> must be diluted with distilled water.
- The pH must be within the range 6 - 7.  
Adjust, if necessary, with sodium hydroxide solution or sulfuric acid.

## 7. Procedure

Rinse the test vessel several times with the pretreated sample.

Pretreated sample (15 - 30 °C)	5 ml	Fill the test vessel to the 5-ml mark.
Reagent CN-1	1 level red dosing spoon	Add and dissolve by swirling.
Reagent CN-2	5 drops <sup>1)</sup>	Add and swirl.

**Immediately** immerse the reaction zone of the test strip in the measurement sample **for 30 sec.**

Remove the strip, allow excess liquid to run off via the long edge of the strip onto an absorbent paper towel, and, **within 10 sec.**, determine with which color field on the label the color of the reaction zone coincides most exactly.

Read off the corresponding result in mg/l CN<sup>-</sup>.

<sup>1)</sup> Hold the bottle vertically while adding the reagent!

## Notes on the measurement:

- The color of the reaction zone may continue to change after the specified reaction time has elapsed. This must not be considered in the measurement.
- If the color of the reaction zone is equal to or more intense than the darkest color on the scale, repeat the measurement using **fresh**, diluted samples until a value of less than 30 mg/l CN<sup>-</sup> is obtained.

Concerning the result of the analysis, the dilution (see also section 6) must be taken into account:

Result of analysis = measurement value x dilution factor

## 8. Method control

To check test strips, test reagents, and handling: Dilute the cyanide standard solution with distilled water to 10 mg/l CN<sup>-</sup> and analyze as described in section 7.

Additional notes see under [www.qa-test-kits.com](http://www.qa-test-kits.com)

## 9. Notes

- **Reclose the reagent bottles and the tube containing the test strips immediately after use.**
- Rinse the test vessel with distilled water only.

