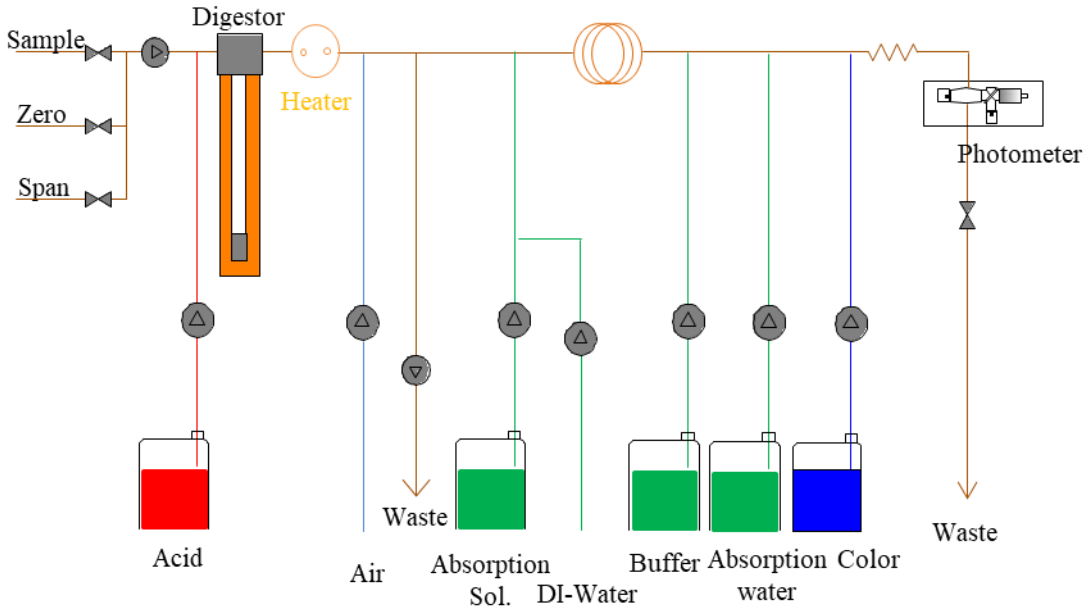
Monitor application M023C

Total Cyanide in Water

Description

This method describes the determination of total cyanide by adding a digestion acid to the sample. This mixture is radiated with UV light and heated up to 90℃. Now the complex cyanides are destroyed. The now created free hydrogen cyanide is stripped by air out of the solution and absorbed by an alkaline solution. This solution is buffered at pH 6-7. Coincident cyanide reacts with chlorine to build cyanogen chloride. This reaction takes less than one minute. With barbituric acid and pyridine an azo dye is formed. This method is linear up to a concentration of 1.15 mg/L. A cubic formula is used for the whole range.

Operation:	Cyclic
Dilution:	None
Interferences:	$SCN^-/CN^-=5.5x10^{-2}$ <1



Typical performance data using aqueous standards (in percent of range)

Measurement Accuracy:	≤ 3%, 0.005mg/L(0-0.6mg/L) or 0.01mg/L(0-2.0mg/L)
Repeatability(Coefficient Variation 50%)	1.2~1.7 %
Detection limit(lowest range)	0.008mg/L(0-0.6mg/L), 0.015mg/L(0-2.0mg/L)
Calibration time;	1840s
Measurement time;	920s.

BL Process

Hardware Specification

Measuring system:	Photometer
Flowcell path length:	10mm (0-0.10 .. 0-0.60mg/L, 0-0.50 ... 0-2.00mg/L)
Measured wavelength	570nm LED
Number of pumps	6(including 1xGas pump)

Reagent Consumption (25min Cycle)

Calibration solution 1 & 2	Depend on calibration frequency
Digestion solution(Acid)	26L/50.7L(low/high range)
Absorption solution	26L/50.7L(low/high range)
Buffer	12L/22.3L(low/high range)
Color reagent	22L/35.4L(low/high range)
Absorption water	5025L/9770L(low/high range)

System Maintenance

Weekly	Check function of valves and pumps Check calibration parameters Check tubing cleanliness
3-monthly	Change pump tubes Check and clean flow cell
Yearly	pump rotors and replace if necessary Replace all tubing

Data Sheets and Reagents

Total CN(mg/L)	Calibration	Required reagent
0-0.100 … 0-0.600 0-0.500 … 0-4.000	0.4 1.6	Acid. Absorption sol. Buffer, Color, Absorption water

References