Chlorine (Cl)

Method - ISE

The standard known addition (SKA) technique is used to perform the analysis. During the process, two readings are done. The difference between both and the slope found during calibration are used to calculate the concentration. Possible changes on the matrix sample are corrected due to this both lectures, as the reference to calculate the result is the relative difference of mV and not the absolute values. This avoids external interferences.

Principle of measurement

Actually, the method is based on the measurement of iodide. Thanks to the reaction between chlorine, the buffer and potassium iodide reagent, chlorine reacts with potassium and iodide is released. Chlorine displaces the iodide. Then, the electrode measures iodide and the amount of iodide measured is equivalent to the chlorine in sample.

Advantages of the method

The method is very simple and specific to measure chlorine. The consumption of reagents is fairly low. Chromate ion, which is an interference for the amperometric method, it is not an interference. Conductivity and calcium, important interferences in DPD methods, are not an interference.

Interferences

Strong oxidizing agents that can convert iodide to iodine, including iodate, bromine, cupric ion, and manganese dioxide, interfere with the method. Silver and mercuric ions must be below about 10 to 20 ppm.

Specifications

Range: From 0 to 1ppm / 5ppm / 20ppm. Adjustable higher concentrations
Accuracy: ±2%
Repeatability: ±2%
Resolution: 0,01 ppm
Analysis time: around 10 minutes
Calibration: two points
ISE: Chlorine electrode

Applications

- Power Plants
- Cooling System

And more...

Reagents consumption

- Reagent 1: 0.4 ml / analysis — 0.5L / month
- Reagent 2: 0.4 ml / analysis — 0.5L / month

Monthly consumption calculated assuming 1 analysis per hour.

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