Lead (Pb)

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

Reagent 1 is used to decrease the solubility and retards the oxidation of the electrode sensing element. Subsequently, ISA solution is added to prepare the sample and to activate the sensor element. After that, a first measurement is done. Subsequently, a small volume of a high concentrated lead solution is added. Finally, a second lecture of mV takes place to calculate the result.

Advantages of the method

The technique used by Instran to measure parameters when ISE sensor is required permits to avoid interferences or bad results due to matrix sample changes as thoses changes are corrected.

Interferences

Copper, mercury and silver ions poison the lead electrode sensing element. High concentrations of ferric and cadmium ions may affect the membrane surface.

Specifications

Range: From 0.2 to 1ppm / 5ppm / 10ppm / 100ppm.
Adjustable higher concentrations with internal dilution.
Accuracy: ±2% Full Scale
Repeatability: ±2%
Resolution: 0,01 ppm / 0,1 ppm / 1 ppm
Analysis time: around 14 minutes
Calibration: one point
ISE: Lead Pb electrode

Reagents consumption

- Reagent 1: 4 ml / analysis — 3L / month
- Reagent 2: 0.5 ml / analysis — 0.5L / month
- Reagent 2: 0.5 ml / analysis — 0.5L / month Monthly consumption

calculated assuming 1 analysis per hour.

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