Nitrate (NO_3-)

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 added to eliminate chloride and nitrite interferences. Reagent 2 is added to activate the electrode before the analysis. After that, a first measurement is done. Subsequently, a small volume of a high concentrated nitrate solution is added. Finally, a second lecture of mV takes place to calculate the result. When the extracting solution is used, a cleaning solution of ammonia is needed after each analysis to eliminate cross-contamination.

Advantages of the method

Almost all probes are affected by nitrite and chloride interferences. However, an extracting solution is used at the beginning to eliminate totally the issues caused by these both ions, being thus NO3 ions the only ones that causes changes on the electrode.

Specifications

Range: From 0 to 5ppm / 10ppm / 20ppm / 100ppm. Adjustable higher concentrations with internal dilution.
Accuracy: ±2% Full Scale
Repeatability: ±2%
Resolution: 0.01 ppm or 0.1 ppm
Analysis time: around 12 minutes
Calibration: one point
ISE: Nitrate NO3 electrode

Reagents consumption

- Reagent 1: 0.5 ml / analysis — 0.5L / month
- Reagent 2: 0.5 ml / analysis — 0.5L / month
- Reagent 3: 2 ml / analysis — 1.5L / month
- Cleaning solution: 6 ml / analysis — 4.5L / month

Monthly consumption calculated assuming 1 analysis per hour.

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