Sulphate (SO_4^{2-})

Method - Colorimetric

After adding the sample into the measurement cell, some reagents are added in order to adjust the solution to the desired conditions (pH, valence's elements, etc.). Then, a blank is done to correct any temperature or turbidity disturbance. Subsequently, a last reagent is added, and it reacts with solution developing a color, which is measured using a correct wavelength. Thanks to the photometer used, the result achieves a great accuracy.

Principle of measurement

Sulfate ion is converted to a barium sulfate suspension under controlled conditions. The resulting turbidity is determined by the appropriated wavelength. Reagent 1 permits to keep the insoluble compounds suspended.

Advantages of the method

The method is easy to be performed, as well as reagents are easy to be prepared. Thanks to Instran features, high concentrations could be achieved applying internal dilution.

Interferences

Lithium, Potassium, Rubidium, Ammonia, Silver, Thallium

Specifications

Range: From 0 to 150 ppm / 500 ppm / 1500 ppm / 3500 ppm.
Adjustable higher concentrations with internal dilution.
Accuracy: ±3-4%
Resolution: ±2%
Repeatability: ±2%
Analysis time: around 15 minutes
Calibration: two point
LED Wavelength: 810 nm

Reagents consumption

- Reagent 1: 0.5 ml / analysis — 0.4L / month
- Reagent 2: 2.5 ml / analysis — 2.0L / month
- Cleaning solution: 5.0 ml / analysis — 4.0L / month

Monthly consumption calculated assuming 1 analysis per hour.

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Sulphate (SO_4^{2-})

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