Total Chromium (Cr)

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

Cerium sulfate is added, which oxidizes the sample and converts all forms of chromium to chromium VI. Then diphenylcarbohydrazide is added which reacts with the chromium VI to produce a reddish-purple color.

Advantages of the method

The method is very simple, very specific and is very sensitive because of the high absorbance of the diphenylcarbazide-chromium(VI) complex formed. Chromium (III) can be measuring calculating the difference between Cr Total and Cr (VI).

Specifications

Range: From 0 to 200 ppb. Adjustable higher concentrations with internal dilution.
Accuracy: ±2%
Repeatability: ±2%
Analysis time: around 10 minutes
Calibration: two point
LED Wavelength: 545 nm

Reagents consumption

- Reagent 1: 2.5 ml / analysis — 2.0L / month
- Reagent 2: 0.8 ml / analysis — 0.75L / month

Monthly consumption calculated assuming 1 analysis per hour.

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www.instran.net

Instru office
c/ Penedés, 46
08820 El Prat de Llobregat
Barcelona • Tel.+34 934 787 161
instran@instran.net
c.salinas@instran.net

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Total Chromium (Cr)

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