Continuous Analysis. Reliable Results.

COMPOSER Johann J. Fux - SEIBOLD Online-Analyser for Nickel

Sources

Natural sources. The element nickel is found at low levels 0.0099% in the earth's crust and exists mainly in the form of sulfide, oxide and silicate minerals.

Industry. Nickel is used in alloys (stainless steel), electroplating, foundries, catalysts, welding rods and coinage, and can be found in electronic equipment, construction materials, aerospace equipment and consumer goods such as batteries, paints and ceramics.

Drinking water. Sources of nickel in ambient waters include physical and chemical degradation of rocks and soils, deposition of atmospheric nickel-containing particulate matter and discharges from industrial processes. A health-based guideline value of Nickel is 0.02 mg/litre.

Toxicity. Inhaled nickel compounds are carcinogenic to humans and that metallic nickel is possibly carcinogenic. Allergic contact dermatitis is the most prevalent effect of nickel in the general population.

Method

Metal is measured as chelate complex between metal ions in the waste water and sensitive spectrophotometric reagent dye. Change of the intensity of the visible light throughout cuvette containing formed metal complex is directly proportional to metal concentration.

Advantage of the system

- Robust design.
- Minimal maintenance.
- Easy handling.
- High accuracy and precision.
- Suitable for mission critical applications.
- Automated cleaning and calibration.

System information	
Measurement variable	Nickel (Ni)
Measurement application	Drinking water, river monitoring, electroplating and semiconducting industry
Measurement ranges	0.005 – 1.00 mg/L (ppm) other ranges possible upon request
Accuracy and Precision	± 3 % (based on full scale)
Resolution	0.005 mg/L
Calibration and cleaning	automated
Seibold Reagent kit	Buffer and Dye Provided by Sigma Aldrich

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MEASUREMENT INFORMATION
Measurement method
Spectrophotometric (LED, detector)
Measurement interval
Continuous; Discontinuous (programmable, external start)
Sample and Reagents consumption per measurement
Sample: ~ 75 - 200 ml
Seibold Buffer and Reagent: ~ 3 ml
ENVIRONMENTAL DATA
Ambient operating temperature, sample temperature: 5 to 40°C
Ambient operating humidity: Up to 95 % RH non-condensing (bellow the condensation limit)
ELECTRICAL DATA
Power supply
Supply voltage: 220 … 230 V AC, 50…60 Hz (110 V AC or 24 V DC, optional)
Power consumption: approx 50 VA
Output signal: 4…20 mA
Screen
Color, TFT, liquid crystal display (LCD) with built-in backlight and brightness adjustment.
MAINTENANCE
Maintenance interval: 3 months

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