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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 sulphide, 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.

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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 wastewater 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) 0.01-2.00 mg/L (ppm)
Accuracy and Precision	± 3 % (based on full scale)
Resolution	<0.001 mg/L
Calibration and cleaning	automated
Seibold Reagent kit	Buffer and Dye