

COMPOSER Heinrich Proch - SEIBOLD Online-Analyser for Chromium

Sources

Natural sources. Chromium is widely distributed in the Earth’s crust. It can exist in valences of +2 to +6. In general, food appears to be the major source of intake.

Industry. Chromium is seldom used alone; as an additive it endows alloys or materials with new properties: strength, hardness, permanence, hygiene, color and resistance to temperature, wear and corrosion.

Drinking water. A guideline value of 0.05 mg/litre of total chromium is recommended in drinking-water.

Toxicity. In humans and animals, Cr(III) is an essential nutrient. The overall toxicity, carcinogenicity and general hazards of chromium are highly related to chemical speciation, the hexavalent chromium compounds being more toxic than the trivalent compounds.

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.
- Can measure total Cr and Cr VI.

System information	
Measurement variable	Chromium (Cr); Cr tot; Cr VI.
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

