

COMPOSER Joseph von Eybler - SEIBOLD Online-Analyser for Iron

Sources

Natural sources. Iron is one of the most abundant metals in the Earth's crust. It is found in natural fresh waters at levels ranging from 0.5 to 50 mg/litre.

Industry. Iron is used for various alloys, steel, in galvanisation process and other industrial processes.

Drinking water. Iron may be present in drinking-water as a result of the use of iron coagulants or the corrosion of steel and cast iron pipes during water distribution. There is usually no noticeable taste at iron concentrations below 0.3 mg/litre, and concentrations of 1–3 mg/litre can be acceptable for people drinking anaerobic well water.

Toxicity. Iron is an essential element in human nutrition. Estimates of the minimum daily requirement for iron depend on age, sex, physiological status and iron bioavailability and range from about 10 to 50mg/day. Portable water should contain iron not more than 0.2 mg/L. Ground water may contain iron at concentrations of several milligrams per litre.

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

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

System information	
Measurement variable	Iron (total Fe ²⁺ /Fe ³⁺ or Fe ²⁺)
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 (below 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

