

**COMPOSER Georg C. Wagenseil- SEIBOLD Online-Analyser for Manganese****Sources**

**Natural sources.** Manganese is one of the most abundant metals in the Earth's crust, usually occurring with iron.

**Industry.** Manganese is used principally in the manufacture of iron and steel alloys, as an oxidant for cleaning, bleaching and disinfection as potassium permanganate and as an ingredient in various products. More recently, it has been used in an organic compound, MMT.

**Drinking water.** Manganese is naturally occurring in many surface water and groundwater sources, particularly in anaerobic or low oxidation conditions. A provisional health-based guideline value of 0.5 mg/litre should be adequate to protect public health.

**Toxicity.** Manganese is an essential element for humans and other animals. Adverse effects can result from both deficiency and overexposure. Manganese is known to cause neurological effects following inhalation exposure

**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	Manganese (Mn)
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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<b>MEASUREMENT INFORMATION</b>	
<b>Measurement method</b>	Spectrophotometric (LED, detector)
<b>Measurement interval</b>	Continuous; Discontinuous (programmable, external start)
<b>Sample and Reagents consumption per measurement</b>	Sample: ~ 75 - 200 ml Seibold Buffer and Reagent: ~ 3 ml
<b>ENVIRONMENTAL DATA</b>	
Ambient operating temperature, sample temperature:	5 to 40°C
Ambient operating humidity:	Up to 95 % RH non-condensing (below the condensation limit)
<b>ELECTRICAL DATA</b>	
<b>Power supply</b>	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
<b>Screen</b>	
Color, TFT, liquid crystal display (LCD) with built-in backlight and brightness adjustment.	
<b>MAINTENANCE</b>	
Maintenance interval:	3 months

