

# Monitoring iron levels during raw water treatment – why?



Iron is one of the most abundant chemical elements on earth, meaning that it is present in practically all water resources. Iron is removed during raw water treatment – not because it is considered a direct health hazard, but to prevent it impairing taste and appearance and causing corrosion and frequent filter blockages.

## Challenges of raw water treatment

The challenges associated with iron removal can be divided into two categories. First, it is important to protect end users and to prevent complaints about changes in taste and deposits on fittings and sinks. Second, treatment plant operators also have an interest in protecting their equipment. The (sand) filters tend to block in treatment plants that deal with high levels of iron. In addition, excessive iron levels in the distribution network can cause deposits and corrosion.

For the above reasons, a reference value of 0.2 mg/L is specified for Iron in the European drinking water regulations.

<b>Time</b>	Raw water is generally monitored through manual sampling. This laborious manual work takes up time that could be used for other important tasks. Waiting for the subsequent laboratory results also makes it difficult to detect peak loads and respond promptly with countermeasures.
<b>Safety</b>	Well-maintained, reliable filters are the centrepiece of any water treatment plant. The better the filter management, the more consistent and cost-effective the treatment will be. Continuous iron monitoring helps to ensure that the filter is backwashed at an early stage, thus maintaining smooth operation.
<b>Optimisation</b>	Continuous iron monitoring: <ul style="list-style-type: none"><li>• Facilitates compliance with the reference value</li><li>• Detects peak loads at the outset</li><li>• Prevents deposits and corrosion in the distribution network</li><li>• Delivers real-time measurement results for reliable filter operation</li></ul>

### EZ1000 Analysers for Dissolved Iron

The EZ1000 Series analysers use colorimetry for the determination of Iron:

- EZ1023 Iron Fe(II), dissolved
- EZ1024 Iron Fe(II+III), total dissolved
- EZ1302 Iron Fe(II+III), total dissolved & Iron Fe(II), dissolved
- EZ1303 Iron Fe(II+III), total dissolved & Iron Fe(II), dissolved & Iron Fe(III), dissolved

Standard measuring range: 0.01 - 1 mg/L

Options include:

- Calibration to 10, 25, or 50% of standard range
- Internal or external dilution
- Multiple stream analysis (1-8 streams) reducing cost per sampling point
- Analogue and/or digital outputs for communication

Detailed information on the analysers – such as methods, measuring ranges etc. – can be found on the respective datasheet and on our website. The website also features related application notes.



*EZ1000 Colorimetric Analyser*

### Additional options for the monitoring of Iron in the laboratory



*DR3900 Spectrophotometer*



*Iron Trace Cuvette Test  
Measuring range 0.01 - 1.0 mg/L Fe  
Product #: LCK521*



*Addista  
Multi parameter standard solution  
Product #: LCA706*



You want to measure these or other parameters? Our application experts will support you in finding the best solution for your specific situation. Just contact us via phone, e-mail or the website.