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# The Photometry Dictionary

TIPS AND TRICKS FOR PHOTOMETRIC MEASUREMENTS -  
FROM OUR CUSTOMERS' MAGAZINE

**WATERWORLD**

## The Ever-Present Iron

[wtw.com/en/photometry](http://wtw.com/en/photometry)

[photometry-compendium.com](http://photometry-compendium.com)

## The ever-present Iron

The measurement of the iron content is an important finding in water analytics. The emission of the processing industry into the municipal wastewater systems are monitored for iron to limit emissions; tests for iron are performed in the well, drinking and surface water, in the food industry and in biology. Iron is an important corrosion parameter in the water of heating and cooling circuits. Therefore, there is a large selection of different photometric test sets for iron.

### Selecting the correct measurement

As a standard, iron is defined as total iron content of Fe(II) and Fe(III). In some cases, a differentiation between the more instable double and triple value iron should be made, e.g. in the food industry or in mining.

In addition to the ionically dissolved parts, iron is often found in colloiddally dissolved, complex bound as well in poorly soluble compounds with interfering associated metals. Here, an exposure (with CrackSets) is pre-switched, which transfers this bound iron into soluble Fe (III). Finally, the total iron content is determined as Fe (II) after reducing the Fe (III) by means of photometric tests. The double value iron present in the solution is determined by a pre-switched measurement without adding a reduction agent.

### Available test sets

- Convenient round cuvette tests: using the test 14896, Fe(II) and Fe(III) are differentiated by 2 consecutive measurements with different test sequences and later added to receive the total iron content.
- The lot-certified reagent tests with barcode support allow the measurement of the lowest measuring ranges at an unbelievably low price per determination (for large volumes, this is currently about 15 cents).
- The powder tests are very practical, especially for on-the-go measurements. Although this "form of presentation" is generally known for higher tolerances, it yields a total of outstanding results. Here, a determination costs approx. 25 cents.

In addition to iron, especially the turbidity is an important parameter for the monitoring of drinking and surface water! Clouding is a factor in spring water, which also prevents the "overriding" of the source, i.e. an excessive load which can be described by a decreased sediment load. After strong rainfalls, the load of ground particles as a type of clouding is also of interest as an indicator for colloiddally bound parameters.

