

REF 918128

# Test 1-28 07.21

## NANOCOLOR® iron LR

en

**Method:**

Photometric determination of iron content by the triazine method.

Rectangular cuvette	50 mm	10 mm
Measuring range (mg/L Fe)	0.005–0.500	0.05–5.00
Measuring wavelength (HW = 5–12 nm)	563 nm / 540 nm	
Reaction time	3 min (180 s)	5 min (300 s)
Reaction temperature	20–25 °C	

**Contents of reagent set**

300 mL iron LR R1  
20 g iron LR R2  
1 measuring spoon 70 mm

**Preliminary tests:**

If there is uncertainty regarding the level of the concentration in the sample to be tested, a preliminary test with QUANTOFIX® Total Iron 100 (2–100 mg/L Fe, REF 91344) rapidly provides this information. This allows the dilution required for the determination to be calculated and prepared directly.

**Interferences:**

To test for the absence of interfering complexing agents we recommend a preliminary test with NANOCOLOR® organic complexing agent 10 (REF 985052).

The following will not interfere:  $\leq 0.5$  mg/L  $\text{Co}^{2+}$ ;  $\leq 5$  mg/L  $\text{Al}^{3+}$ ,  $\text{Mn}^{2+}$ ,  $\text{MoO}_4^{2-}$ ;  $\leq 10$  mg/L  $\text{Cu}^{2+}$ ,  $\text{Hg}^{2+}$ ,  $\text{Ni}^{2+}$ ,  $\text{Pb}^{2+}$ ,  $\text{CN}^-$ ;  $\leq 50$  mg/L  $\text{Cr}_2\text{O}_7^{2-}$ ,  $\text{NO}_2^-$ ;  $\leq 500$  mg/L  $\text{Ca}^{2+}$ ,  $\text{Zn}^{2+}$ ;  $\leq 750$  mg/L  $\text{PO}_4^{2-}$ ;  $\leq 1000$  mg/L  $\text{Cd}^{2+}$ ,  $\text{Mg}^{2+}$ ,  $\text{NH}_4^+$ ,  $\text{SiO}_3^{2-}$ ; < 1 % nonionic surfactants, cationic surfactants;  $\leq 1$  % anionic surfactants;  $\leq 5$  % sodium acetate;  $\leq 20$  %  $\text{NaNO}_3$ .

\* add 500 mg thiourea per 20 mL sample

The method is also suitable for the analysis of seawater. A prolonged reaction time of 5 min may be necessary.

**Procedure:**

Required accessories: Volumetric flask 25 mL (REF 91661), 10 mm and 50 mm rectangular cuvettes (REF 91933 and 91935), piston pipettes with tips

Sample	Blanc value <sup>[1]</sup>
In a 25-mL volumetric flask: Place <b>20 mL</b> sample solution (the pH of the sample must be between pH = 1 and pH = 7), add <b>3 mL</b> R1, mix, add <b>1 measuring spoon</b> of R2	In a 25-mL volumetric flask, place: <b>20 mL</b> distilled water, add <b>3 mL</b> R1, mix, add <b>1 measuring spoon</b> of R2
Fill up sample and blank value with distilled water to 25 mL and mix. After 3 min <sup>[2]</sup> pour into the cuvettes, clean the outside of the cuvettes and measure.	

<sup>[1]</sup> In the iron determination in the 10-mm cuvette, the sample solution can also be used without addition of reagent as a blank value.

<sup>[2]</sup> For the iron determination in the 10-mm cuvette a reaction time of 5 min is recommended.

**Determination of iron(II) ions:**

Procedure as described above, but without reagent ion R2.

**Measurement:**

For MACHEREY-NAGEL photometers see manual, test 1-28. Photometers of other manufacturers: Check the factor for each type of device by measuring standard solutions.

**Analytical quality assurance:**

NANOCONTROL Multistandard Metals 1 (REF 925015) or Multistandard Drinking Water (REF 925018)

**Reduced analytical procedures:**

To increase the number of determinations, 10 mL can be prepared in volumetric flasks: 8 mL sample solution + 1.2 mL R1 + 1 measuring spoon of R2. The evaluation is then performed in a semi-micro cuvette (REF 91950).

**Disposal:**

Information regarding disposal can be found in the safety data sheet. You can download the SDS from [www.mn-net.com/SDS](http://www.mn-net.com/SDS).

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