REF 918128

Test 1-28 07.21

NANOCOLOR® iron LR

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: ≤ 0.5 mg/L Co^{2+}; ≤ 5 mg/L Al^{3+}, Mn^{2+}, MoO_4^{2-}; ≤ 10 mg/L Cu^{2+}*, Hg^{2+}, Ni^{2+}, Pb^{2+}, CN^-; ≤ 50 mg/L $Cr_2O_7^{2-}$, NO_2^-; ≤ 500 mg/L Ca^{2+}, Zn^{2+}; ≤ 750 mg/L PO_4^{2-}; ≤ 1000 mg/L Cd^{2+}, Mg^{2+}, NH_4^+, SiO_3^{2-}; < 1 % nonionic surfactants, cationic surfactants; ≤ 1 % anionic surfactants; ≤ 5 % sodium acetate; ≤ 20 % $NaNO_3$.
* 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** [1]
In a 25-mL volumetric flask: Place **20 mL** sample solution (the pH of the sample must be between pH = 1 and pH = 7), add **3 mL** R1, mix, add **1 measuring spoon** of R2	In a 25-mL volumetric flask, place: **20 mL** distilled water, add **3 mL** R1, mix, add **1 measuring spoon** of R2
Fill up sample and blank value with distilled water to 25 mL and mix. After 3 min[2] pour into the cuvettes, clean the outside of the cuvettes and measure.	

[1] In the iron determination in the 10-mm cuvette, the sample solution can also be used without addition of reagent as a blank value.
[2] 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***.

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