Supelco®

1.00606.0001

Spectroquant®

Iodine Test

I_2

1. Method

In weakly acidic solution free iodine reacts with dipropyl-p-phenylenediamine (DPD) to form a red-violet dye that is determined photometrically.

2. Measuring range and number of determinations

Cell mm	Measuring range mg/l I_2	Number of determinations
50	**0.050** - 2.000	200
20	0.10 - 5.00	
10	0.20 - **10.00**	

For programming data for selected photometers / spectrophotometers see www.sigmaaldrich.com/photometry.

3. Applications

Sample material:
Drinking water
Wastewater
Disinfectant solutions

4. Influence of foreign substances

This was checked individually in solutions containing 3.5 and 0 mg/l I_2. The determination is not yet interfered with up to the concentrations of foreign substances given in the table. Cumulative effects were not checked; such effects can, however, not be excluded.

Concentrations of foreign substances in mg/l or %					
Al^{3+}	250	Mn^{2+}	100	**Br_2**	**0.1**
Ca^{2+}	1000	**NO_2^-**	**0.1**	**ClO_2**	**0.1**
CN^-	**0.1**	**S^{2-}**	**0.1**	**Cl_2**	**0.05**
CO_3^{2-}	1000			**H_2O_2**	**0.05**
Cr^{3+}	250			**O_3**	**0.05**
$Cr_2O_7^{2-}$	**0.1**			NaCl	10 %
Cu^{2+}	100			$NaNO_3$	10 %
Fe^{3+}	100			Na_2SO_4	10 %

5. Reagents and auxiliaries

The test reagent is stable up to the date stated on the pack when stored closed at +15 to +25 °C.

Package contents:
1 bottle of reagent I_2-1
1 AutoSelector

Other reagents and accessories:
MQuant® pH-indicator strips pH 5.0 - 10.0, Cat. No. 109533
MQuant® pH-indicator strips pH 0 - 6.0, Cat. No. 109531
Sodium hydroxide solution 1 mol/l Titripur®, Cat. No. 109137
Sulfuric acid 0.5 mol/l Titripur®, Cat. No. 109072

Pipette for a pipetting volume of 10 ml
Rectangular cells 10, 20, and 50 mm (2 of each), Cat. Nos. 114946, 114947, and 114944

6. Preparation

- **Analyze immediately after sampling!**
- **The pH must be within the range 4 - 8.**
  Adjust, if necessary, with sodium hydroxide solution or sulfuric acid.
- Filter turbid samples.

7. Procedure

Pretreated sample (**5 - 40 °C**)	10 ml	Pipette into a test tube.
Reagent I_2-1	1 level blue microspoon (in the cap of the I_2-1 bottle)	Add and shake **vigorously until the reagent is completely dissolved**.
Leave to stand for 1 min (reaction time), then fill the sample into the cell, and measure in the photometer.		

Notes on the measurement:

- **Certain photometers may require a blank** (for details see the photometer manual).
- **When using the 50-mm cell** is recommended to measure against an own prepared blank sample (preparation as per measurement sample, but with distilled water instead of sample) to increase the accuracy. Configure the photometer for blank measurement.
- For photometric measurement the cells must be clean. Wipe, if necessary, with a clean dry cloth.
- Measurement of turbid solutions yields false-high readings.
- The pH of the measurement solution must be within the range 4.5 - 5.5.
- The color of the measurement solution remains stable for 30 min after the end of the reaction time stated above.
- In the event of iodine concentrations exceeding 25 mg/l, other reaction products are formed and false-low readings are yielded. In such cases it is advisable to conduct a plausibility check of the measurement results by diluting the sample (1:10, 1:100).

8. Analytical quality assurance

recommended before each measurement series
To check the photometric measurement system (test reagent, measurement device, handling) and the mode of working, a freshly prepared iodine standard solution containing 5.00 mg/l I_2 (application see the website) can be used.
Sample-dependent interferences (matrix effects) can be determined by means of standard addition.
Additional notes see under **www.qa-test-kits.com**.
For quality and batch certificates for Spectroquant® test kits see the website, where you will find all data in production control, that are determined in accordance with ISO 8466-1 and DIN 38402 A51.

9. Notes

- Reclose the reagent bottle immediately after use.
- **Information on disposal can be obtained at www.disposal-test-kits.com.**

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