

AQUACOUNTER Application Sheet	COM series	DATA No. B7	1st edition
Pharmaceuticals	Quantification of iodine in mouthwash		

1. Measurement outline

Iodine contained in mouthwash is quantified by oxidation-reduction titration according to Japanese Pharmacopoeia. This section introduces an example in which 5mL sample is collected precisely and 50mL dilution water is added for potentiometric titration with sodium thiosulfate.



2. Reagents and Electrodes

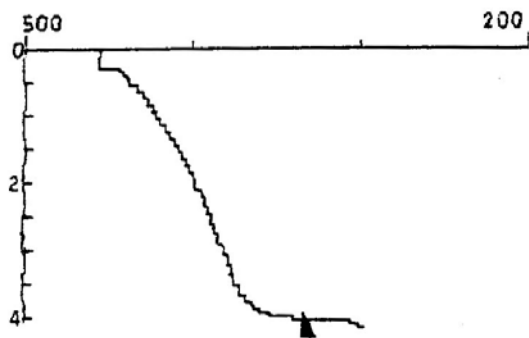
(1) Reagents	Titrant	0.1mol/L sodium thiosulfate titrant
(2) Electrodes	Indicator electrode	Platinum electrode PT-301 (P/N D231244-A)
	Reference electrode	*Reference electrode RE-201 *standard accessory

3. Measurement conditions example (for COM-1600S)

Master File No.1	
Condition file: 1	
Method	AUTO
Amp No.	2
Buret No.	1
Meas Unit	mV
S-Timer	10 sec
CP	0 mL
DP	0 mL
Direction	N/A
End Sens	500
Over mL	0 mL
Max Vol	20 mL
Mode No.	3
Unit	%
Blank	0
Factor	Titer of the titrant
Molarity	0.1
K	126.9
Formula	(D-B)×K×F×M/(S×10)

Mode No.3	
Pre Int	0 sec
Del K	2
Del Sens	0 mV
Int Time	1 sec
Int Sens	3 mV
Brst Speed	2
Pulse	40

4. Measurement example



Sample measurement results

Sample No.	Sample volume (ml)	Titration value (mL)	Concentration (mg/mL)
1	5	3.948	10.03
2	5	3.949	10.03
3	5	3.948	10.03
4	5	3.949	10.03
5	5	3.948	10.03
6	5	3.949	10.03
Avg.			10.03 mg/mL
Std. Dev.			0.00 mg/mL
C.V.			0.00 %

5. Outline

- (1) Japanese Pharmacopoeia stipulates titration with sodium thiosulfate after adding potassium iodide and hydrochloric acid to the sample. This sample was titrated by only diluting since it already contained potassium iodide and was mildly acidic.
- (2) Potentiometric titration method using platinum electrode was adopted as the end point detection method. This method has higher sensitivity compared to the end point detection method by starch indicator and is capable of measurement without individual errors.

Key words

Medical product, Japanese Pharmacopoeia, platinum electrode, oxidation-reduction titration

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