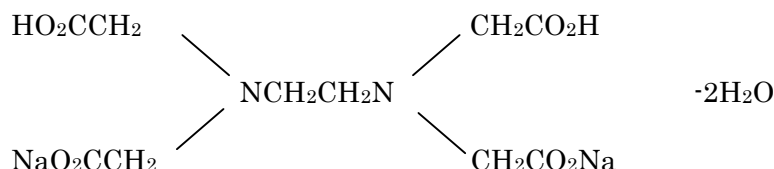


AQUACOUNTER Application Sheet	COM series	DATA No. B14	1st edition
Pharmaceuticals	Quantification of sodium edentate (EDTA·2Na) in preparations		

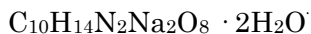
1. Measurement outline

The method for quantifying sodium edentate (EDTA·2Na) is stipulated in Japanese Pharmacopoeia (13th edition, Part 2). This section introduces the results of measuring the sodium edentate in preparations by chelatometric titration conforming to Japanese Pharmacopoeia.

The sample containing sodium edentate is weighed and added with ammonia-ammonium chloride buffer and indicator for titration with zinc chloride titrant. The end point is determined when the color of the titrated solution changes from blue to red. 1mol of EDTA·2Na reacts quantitatively with 1mol of metal salt.



Sodium Edetate (disodium ethylenediaminetetraacetate)



2. Reagents and Electrodes

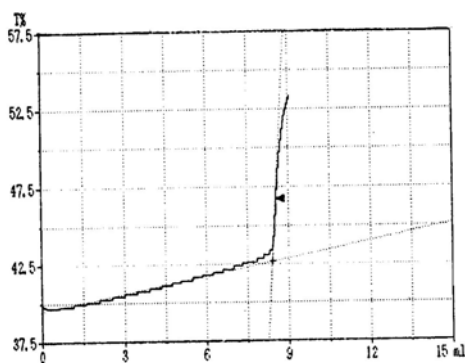
(1) Reagents	Titrant	0.005mol/L ZnCl ₂ titrant
	Buffer	Ammonia-ammonium chloride buffer (pH 10.7) *3mL for 1 measurement
	Indicator	0.04g Eriochrome Black T-sodium chloride indicator or 4 – 5 drops of 0.5% methanol solution
(2) Electrodes	Photometric probe with 650nm filter	

3. Measurement conditions example (for COM-1600M w/ Photometric unit)

Master File No.1	
Condition file: 1	
Method	F Cross
Amp No.	2
Buret No.	1
Meas Unit	T%
S-Timer	0 sec
CP	0 mL
DP	0 mL
Direction	N/A
End Sens	300
Over mL	0.5 mL
Max Vol	20 mL
Mode No.	5
Unit	%
Blank	0
Factor	Titer of the titrant
Molarity	0.005
K	372.24
Formula	$(D-B) \times K \times F \times M / (S \times 10)$

Mode No.5	
Pre Int	0 sec
Del K	5
Del Sens	0 mV
Int Time	3 sec
Int Sens	3 mV
BrT Speed	2
Pulse	40

4. Measurement example



Measurement results on sodium edentate

Sample No.	Sample volume (g)	Titration value (mL)	Content (%)
1	2.0610	8.413	0.7597
2	2.1145	8.525	0.7504
3	2.1765	8.803	0.7528
4	2.1160	8.602	0.7556
Avg.			0.7546 %
Std. Dev.			0.004 %
C.V.			0.529 %

5. Outline

In this measurement, end point detection method using the measurement unit for photometric titration was used instead of the method of detecting the point where the color of the indicator changes by visual inspection. This method allows clear and precise detection of the color change point for the indicator, and has the feature of obtaining measurement results with small individual errors.

Key words

Medical product, sodium edentate, EDTA, zinc chloride titrant, ammonia-ammonium chloride buffer

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