

Kyoto Electronics

Acid-Base titration

No. NZ 2 1 - 1 4 2 6 6

Acidity of 100% orange juice

—Abstract—

Based on JAS, the titrated 0.1mol/L-sodium hydroxide under pH8.3 was converted to citric acidity.

—Equipment—

Main unit : Automatic potentiometric titrator	AT-510
Detector : Standard preamplifier	STD-510
Combination glass electrode	C-171 + #429-0012
Temperature compensation electrode	T-111

—Reagent—

Titration solution : 0.1mol/L-sodium hydroxide

—Method—

- (1) About 5g sample was added to 200mL beaker.
- (2) Added pure water to make it 100mL.
- (3) Titrated with 0.1mol/L-sodium hydroxide to determine acidity.

—Calculation—

Acidity(citric acid w/w%) : $(EP1-BL1) \times TF \times C1 \times K1 / SIZE$
EP1: titrated (mL) BL1:blank(mL)=0.0427 TF:factor=0.9762
SIZE: sample size(g) K1: unit conversion coefficient=0.1
C1:concentration conversion=6.4mg/mL(6.4mg citric acid \equiv 1mL 0.1mol/L-NaOH)

—Ambient condition—

Room temperature : 25.0°C Humidity : 57 % Weather : cloudy

-Titration parameter-

[Titration Parameter]	<Calculation>
Date : 2014/06/28 15:38	Calc. Type : Sample
Sample ID : Orange Juice	Conc.1 : Set
	$CO1=(EP1-BL1)*TF*C1*K1/S$
	IZE
Method No. : 14	Unit : %
<Auto Intermit>	EP No. : 1
Method Name:	Conc.2 : Off
Citric Acid	Conc.3 : Off
Dose Reagent Name:	Conc.4 : Off
0.1M-NaOH	Conc.5 : Off
Titr Reagent Name:	Temp. Comp : Off
0.1M-NaOH	
Method Type : Titration	<Constant>
	C1(mg/mL) : 6.4
	K1 : 0.1
<Titration>	<Dose Constant>
Form : Level Stop	Factor : 0.9762
APB No. : 1	Conc. : 0.1
Unit No. : 1	
Detector No. : 1	<Titr.Constant>
Unit : pH	Factor : 0.9762
Max Volume : 40.00 mL	Conc. : 0.1
Wait Time : 0 s	
Direction : Auto	<Blank>
	Blank 1 : 0.0
Titration Form : Level Stop	
<Control>	
End Point No. : 1	
1st Level : 8.3pH	
Over Titr.Vol. : 0.0 mL	
Gain : 1	
Data Samp.Pot. : 4.0 mV	
Data Samp.Vol. : 0.5 mL	
Stability : 0.5mV/s	
Delay Time : 1 s	
Limit Time : 0 s	

-Titration curve-

*** Result ***	
Sample No. 28-02	
Date : 2014/06/28 13:40	
Sample ID : Orange Juice	
Method No. : 14	
<Auto Intermit>	
Method Name:	
Citric Acid	
Titration Time : 00:03:23	
Size : 4.9818g	
Conc-1 : 0.6925%	
End Point-1	
Volume : 5.5215mL	
Potential : 8.30pH	

-Results-

Run	Size (g)	Vol. (mL)	Conc. (%)
1st	5.1879	2.8558	0.3439
2nd	5.1939	2.8805	0.3465
3rd	5.2226	2.8805	0.3446

Statistics	
Mean	0.3450%
SD	0.0013%
RSD	0.3900%

-Comment-

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