

AQUACOUNTER Application Sheet	COM series	DATA No. C10	1st edition
Cosmetics	Measurement of acid value in odorants		

1. Measurement outline

The acid value for essential oil, raw material for odorant, is measured according to JIS K0070-1992 (acid value test for oil and fat products and chemical products).

In general, acid value is expressed as the mg of potassium hydroxide required for neutralizing the free fatty acids, resin acids, etc. contained in 1g of sample.

2. Reagents and Electrodes

(1) Reagents	Titrant	0.1mol/L potassium hydroxide-ethyl alcohol titrant
	Solvent	Benzene-ethyl alcohol: 1 + 1
(2) Electrodes *Standard accessories	Indicator electrode	*Glass electrode GE-101B to IE jack.
	Reference electrode	*Reference electrode RE-201 to RE jack.
	Thermistor electrode	*Thermistor electrode TE-401

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

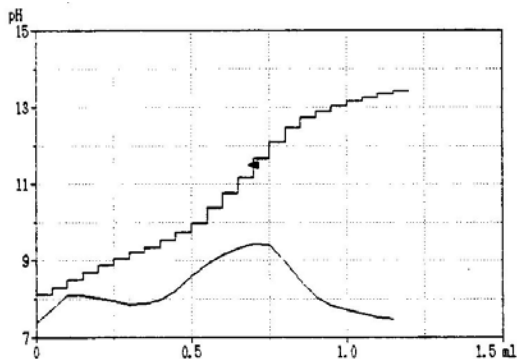
Master File No.1 Condition file: 1	
Parameters for Condition file 1	
Method	SET
Amp No.	1
Buret No.	1
Meas Unit	pH
S-Timer	5 sec
CP pH	1.00 pH
Direction	UP
DP pH	7.00 pH
End point	11.50 pH
Over mL	0.50 mL
Max Vol	40 mL
Mode No.	20
Unit	mg/g
Formula	$5.611 \times F \times D / S$
Blank	0
Molarity	0.1
Factor	Titer of the titrant
K	0

Mode No.20	
Pre Int	0 sec
Del K	0
Del Sens	0 mV
Int Time	5 sec
Int Sens	0 mV
Brt Speed	2
Pulse	40

4. Procedure

An appropriate volume of sample is collected, weighed and dissolved in 100mL of solvent. A few drops of phenolphthalein indicator are added for titration with potassium hydroxide-ethyl alcohol titrant. Potentiometric titration method using glass electrode is also possible. This section introduces the latter measurement method with potentiometric titration.

5. Measurement example



Measurement results

Sample No.	Sample volume (g)	Titration value (mL)	Acid Value (mg/g)
1	1.5570	0.684	2.38
2	2.0184	0.890	2.39
Avg.			2.38mg/g

6. Note

1) Titration solvent

While this section used benzene-ethyl alcohol (1 + 1) as the titration solvent, it must be noted that it has been revised for titration with diethylether-ethyl alcohol (1 + 1 or 2 + 1) in JIS K0070-1992. In addition, titration solvent shall be neutralized with potassium hydroxide or blank measurement shall be taken in advance for correction.

2) Electrode control

Though glass electrode and reference electrode were used in this titration, responsiveness and the electromotive force of glass electrode may be deteriorated after several measurements. Regarding the reference electrode, deposition of KCl inner solution may cause potential fluctuation. Thus it is recommended to immerse the electrodes in water regularly to activate.

Key words

Cosmetic product, odorant, acid value

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