

AQUACOUNTER Application Sheet	COM series	DATA No. K6	1st edition
Organic Acid		Quantification of phthalic acid	

### 1. Measurement outline

Phthalic acid is an acid containing 2 carboxyl groups (-COOH) with benzene core, and is called an aromatic carboxylic acid.

Phthalic acid is produced in mass quantity as a raw material in organic synthesis chemistry and phthalic acid ester as a plasticizer for plastic.

This section introduces an example in which a solid sample containing phthalic acid was dissolved in acetone for neutralization titration with potassium hydroxide titrant.



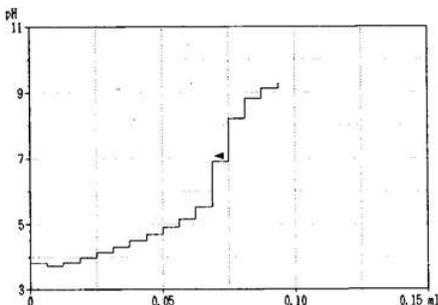
### 2. Reagents and Electrodes

(1) Reagents	Titrant	0.1mol/L potassium hydroxide titrant
(2) Electrodes *standard accessories	Indicator electrode	*Glass electrode GE-101B to IE jack
	Reference electrode	*Reference electrode RE-201 to RE jack

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

(1) Method	Auto
(2) End Sens	1000
(3) Mode	21
Pre Int	0
Del K	0
Del Sens	0
Int Time	30
Int Sens	0
Brt Speed	2
Pulse	10

### 4. Measurement example



#### Measurement results on phthalic acid

Sample No.	Sample volume (g)	Titration value (mL)	Concentration (%)
1	0.5079	0.070	0.229
2	0.5045	0.075	0.248
3	0.5014	0.068	0.227
<b>Avg.</b>			<b>0.234 %</b>
<b>Std. Dev.</b>			<b>0.012 %</b>
<b>C.V.</b>			<b>5.1 %</b>

## 5. Outline

About the electrodes

This measurement is a non-aqueous neutralization titration using acetone as the titration solvent. In non-aqueous titration using glass electrode, fluctuation of titration curve tends to grow as the dielectric constant of the titration solvent becomes smaller. As a measure to reduce this fluctuation, it is possible to replace the inner solution for reference electrode from potassium chloride to methanolic potassium chloride solution (saturated).

## Key words

Quantification of phthalic acid, neutralization titration

### **Hitachi High-Technologies Corporation**

Head Office 1-24-14, Nishishinbashi, Minato-Ku, Tokyo 105-8717, Japan

Tel : 81-3-3504-7239 Fax : 81-3-3835-7302

<http://www.hitachi-hitech.com>

### **Hiranuma Sangyo Co.,Ltd.**

1739, Motoyoshidacho, Mito-City, Ibaraki 310-0836, Japan

Tel : 81-29-247-6411 Fax : 81-29-247-6942

<http://www.hiranuma.com>