KEM Application Note　　　　KCZ-06071

Coulometric Karl Fischer titration

Kyoto Electronics Manufacturing Co., Ltd.

Data No. LA39-06053

Moisture measurement on Acetone

-Summary-

As the result of the feasibility study of the moisture measurement for acetone by MKC-520, a good repeatability was observed. Therefore, this measurement is judged possible.

-Measuring instrument-

Main unit:	MKC-520	Coulometric KF moisture titrator
Electrode:	M-712	Twin Platinum Electrode
	#433-0048	Inner burette (one chamber)

-Reagent-

Anolyte: Coulomat AK

-Measuring method-

Preparation:

(1) Put 150mL of Anolyte in the titration cell.

(2) Pre-titrate it for dehydration.

Measurement:

(1) Take approximately 0.75g of the sample with the syringe and measure the moisture of it.

-Equation-

Moisture(%): ((Data-BG × t-Blank) / (Wt1-Wt2)) / 10000

Data: Total water content (μg)	t : Measuring Time (s)	Wt1: Tare including sample weight (g)
BG: Background value (μg/s)	Blank: Blank value (μg)	Wt2: Tare including residual weight (g)

-Ambient conditions-

Temperature: 25.8 °C　　Relative Humidity: 53 %　　Weather: Fine

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-Measurement parameter-

[T I T R. P A R A]

Method 1
Titr. Cell No.1
t(Stir) 0 s
t(Wait) 0 s
t(Max) 0 s
Drift Stop Rel
0.1 μg/s
Cont.Gain 5.0
Stable 0.1 μg/min
Start Auto
Oven Off

[C A L C U. P A R A]

Calc. No. 2
Unit : %
Weight : Variable
Drift Comp : Auto

-Printout data-

＊＊＊Result＊＊＊

Sample No. 01-01

Date 2006/03/04 13:50
Titr. Cell No.1
Wt1 0.7619 g
Wt2 0.0000 g
Net 0.7619 g
Result 1470.9 ug
0.1931 %

＊＊＊Result＊＊＊

Sample No. 01-02

Date 2006/03/04 14:10
Titr. Cell No.1
Wt1 0.7966 g
Wt2 0.0000 g
Net 0.7966 g
Result 1525.2 ug
0.1915 %

＊＊＊Result＊＊＊

Sample No. 01-03

Date 2006/03/04 14:24
Titr. Cell No.1
Wt1 0.7401 g
Wt2 0.0000 g
Net 0.7401 g
Result 1419.6 ug
0.1918 %

-Measurement results-

Run	Sample size (g)	Moisture(μg)	Conc. (%)
1	0.7619	1470.9	0.1931
2	0.7966	1525.2	0.1915
3	0.7401	1419.6	0.1918
4	0.7004	1340.7	0.1914
5	0.8232	1587.3	0.1928

Statistics		
Mean	0.1921	%
SD	0.0008	%
RSD	0.4020	%

-Comments-

A reagent compatible with ketone is used as Anolyte in order to deter the formation of water by reaction with the ketone group in the sample. For your reference, an alternative method to deter this side reaction is to make measurements while cooling the measuring cell.

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