Category	*Coulometric Karl Fischer Titrator AQ series*
Resins/Rubber/Adhesives /Paints/Electronics etc…	**Water in PET** (polyethylene telephthalate) by Indirect method (Evaporator + Coulometric KF titrator)
Referenced methods	ASTM E1064, D6304

Key words; resins, solid evaporator, coulometric Karl Fischer titration

Outline

Water in resins can be determined by heat evaporation indirect titration with *Coulometric Karl Fischer titrator AQ-2100/AQ-300* interfaced with *Solid Evaporator EV-2000*. By heating the sample at near its melting point, only water is evaporated and carried into the titration cell to be measured. This system is very effective to keep the anode solution in the cell and reduce the consumption of expensive KF reagents.

Reagents and carrier gas

Anode solution	Hydranal® Coulomat AG 100mL
Cathode solution	Hydranal® Coulomat CG
Additional solvent	Dehydrated methanol 50mL
Carrier gas	Nitrogen gas (or dry air* Optional dry air pump is required.)

Instruments

KF Titrator	**AQ-2100S** / **AQ-300**
Evaporator	**EV-2000** Solid evaporator *Optional Key-pad (P/N D315016-A) is necessary when the AQ-300 is used.
Printer	Thermal Printer **PR-2000T2** / Dot impact printer **PR-302B**
**Dry air pump*	Dry air pump (P/N D310513-A) *if nitrogen gas is not available for carrier gas.

Procedure (based on the AQ-2100)

1. Place an aluminum foil cup into the evaporation chamber and set it on the evaporation base.
2. Press F1[EV Start] key on the AQ-2100 to start pre-heating.
3. Press the SAMPLE key once the instrument is ready for measurement.
4. Place a sample container filled with samples cut into small pieces on the balance, and tare it.
5. Open a glass stopper and introduce about 1g of sample.
6. Close the stopper and press the TITRATION key to start titration.
7. Weigh the sample container again.
8. The difference between the total weight before/after sampling shall be the sample size.
9. Press the S.SIZE/No. key to input the amount of sample added.

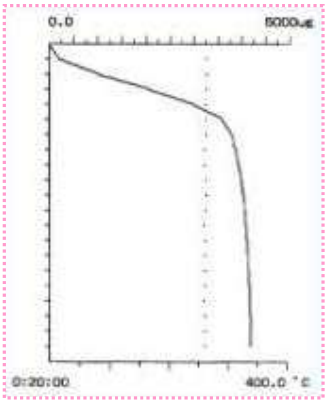
Condition parameters and an example result

Condition file	
Cal Mode	0
Interval Time	20 sec
S-Timer	0 min
T-Timer	0 min
Current	Medium
Blank Value	0.0 µg
Unit Mode	AUTO
Back Ground	ON
Auto Interval	0.00000 g
Minimum Count	5 µg

EV file	
Step1 Temp.	260
Time	20 min
Pre Heat End Time	3 min
B.G.	0 µg
Cooling Time	5 min
B.G. Count	15
Back Purge Time	15 sec

*EV file is available only for AQ-2100

Carrier gas flow rate	0.5L/min



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