AQUAMICRON
Mitsubishi Karl Fischer Reagents

Technical Notes C004

" How to validate Moisture Meter by using AQUAMICRON Water Standard "

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MITSUBISHI CHEMICAL
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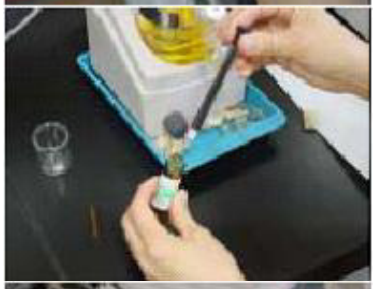
API Corporation

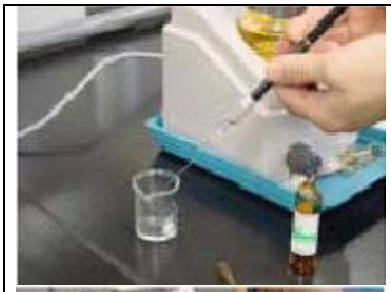
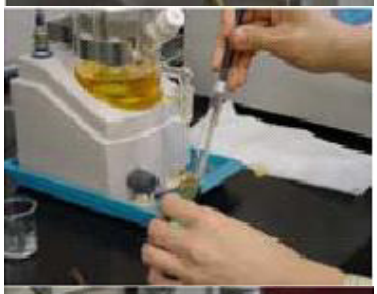
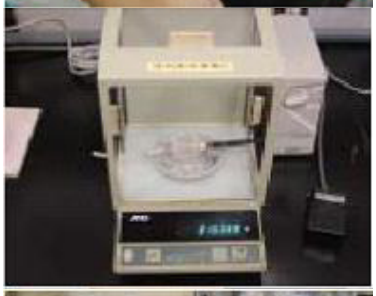
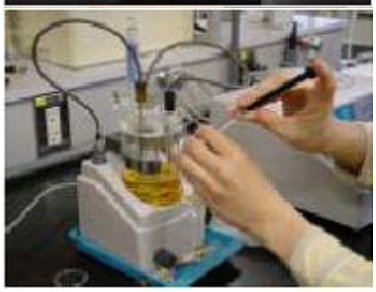
Purpose of Operation:
To validate Coulometric moisture meter by using AQUAMICRON Water Standard.

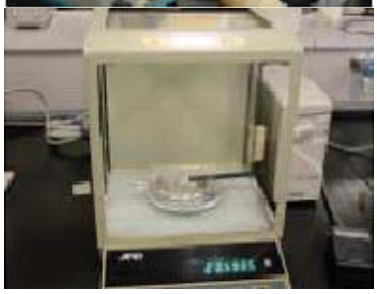
Apparatus:
Coulometric Moisture Meter CA-100 (Mitsubishi Chemical Corporation)
Aquamicron Water Standard 0.2mgH2O/g or 2mgH2O/g (API Corporation)
Gastight syringe (5ml)
Silicone rubber cap (or a cap having an equivalent function)
Balance
10ml glass beaker
Self- protective Equipment

Measurement Condition:
Parameters of Moisture Meter: Standard condition to be set
Calculation Formula: M/(W-w)
(M: Measured value in, ug)

Procedures:

Operation		Remarks
	1) Confirm the instrument is ready to use. 2) Open the seal of an ampoule which contains AQUAMICRON Water Standard.	Cut at marked –up spot by pulling.
	3) After carefully drying a gastight syringe, withdraw 1ml of AQUAMICRON Water Standard into a syringe.	
	4) Flush several times with the tip of the needle pointed upward.	

	5) Dispose of the cleaning fluid into a beaker.	
	6) Withdraw in 3ml of AWS again.	
	7) Wipe the tip of the needle with a paper wiper.	
	8) Remove the gas with the tip of the needle pointed upward and then cover the tip of the needle with a rubber cap..	
	9) Determine the weigh of the sample(W).	The W can be input automatically, if the balance connected to the moisture meter.
	10) Press the titration key, remove the rubber cap, and inject 1ml of AWS into the cell to start titration.	

 	11) Pull out the syringe needle and cover the tip of the needle with the rubber cap. 12) Weigh the syringe again(w). The difference between the two weights is the weight of the AWS(W-w). 12) Go back to 3) and repeat the measurements 3 times. Verify the accuracy of the system by comparing the certified value and the average value of the 3-time analysis.	

Note:

Guideline for the verification:

a) The recovery ratio, (the analytical value/the certified value) x100, should be within the ranges indicated below.
   In case of AWS10: 100+/-3%, The recovery ratio should be within 97-103%.
   In case of AWS02: 100+/-5%, The recovery ratio should be within 95-105%.

b) Try to do as follows when the verification fails,
   1. Repeat measurements from the first again.
   2. Wipe the detection electrode with paper wiper and then try 1.
   3. Replace anolyte and catholyte and then try 1.
   4. Clean the electrolysis cell and then try 1.
   5. Contact with manufacturer or agent.