Determination of Water Content in Ultra-Low Sulfur Diesel Fuel

1. Apparatus

a. AQUACOUNTER Coulometric Karl Fischer Titrator Model AQ-200

2. Reagents

a. Anode solution: HYDRANAL Coulomat AG-H

b. Cathode solution: HYDRANAL Coulomat CG

3. Test Procedure

1) Take up approx. 5ml of diesel fuel into a glass syringe.
2) After the background level becomes stable, press the SAMPLE key.
3) Inject the sample into the titration cell through the rubber septum.
4) Press the TITRATION key to start the measurement.

Titration parameter settings:

Parameters	Values
Cal Mode	0
INTERVAL	20 sec.
Current	SLOW

4. Result and Discussion

Table 1. Analytical Result of Ultra-Low Sulfur Diesel Fuel

No.	Sample Size (g)	Water (ugH_2O)	Water (ppm)	Statistics	
1	2.2591	77.3	34.2	**AVG(3)**	**33.6 ppm**
2	2.4844	83.1	33.4	SD	0.5 ppm
3	2.4333	81.0	33.3	CV	1.5 %

Table 1. shows the analytical results of ultra-low sulfur diesel fuel. Good reproducibility was obtained. Up to 25 ml of sample can be run without exchanging the reagents. The sample fuel is commercially available in Japan, the sulfur content of the sample is under 10 ppm.

Fig.1 shows the titration curve of the sample.

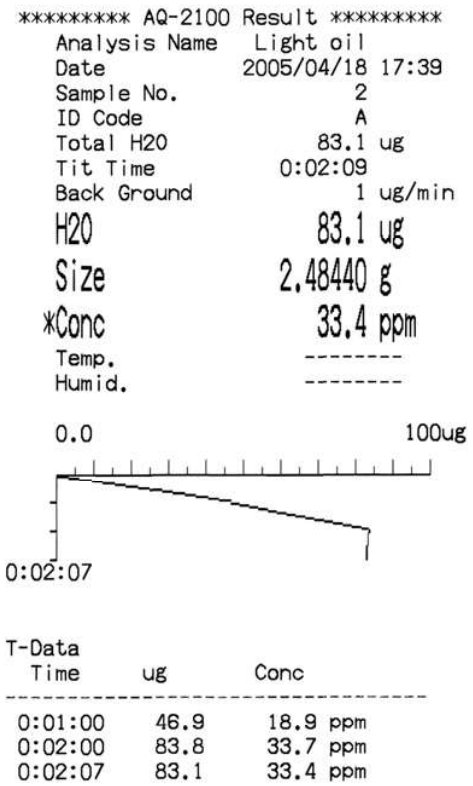

Fig. 1 Titration curve of the sample.