Category	*Coulometric Karl Fischer Titrator AQ series*
Petroleum Products **Biofuels**	**Water content** by Coulometric Karl Fischer Titration *Direct & Indirect (Azeotropic distillation) methods*
Referenced methods	ASTM E1064, D6304, EN ISO 12973

Key words; Petroleum products, lubricants, additives, bio-diesel, indirect method

Outline

Generally, water content in biofules, lubricants, insulation oils and other petroleum products is very low and measured by coulometric Karl Fischer method using AQUACOUNTER® AQ-2100 /AQ-300. Some samples may contain substances, which may interfere KF reaction, and the direct injection is not acceptable. Or, accumulated samples in the electrolytic cell may reduce the solubility of samples in anode solution. In such cases, using the azeotropic distillation indirect titration along with EV-2000L is effective to keep clean the anode solution to reduce the consumption of expensive KF reagents and also to prevent interfering substances being mixing into the cell.

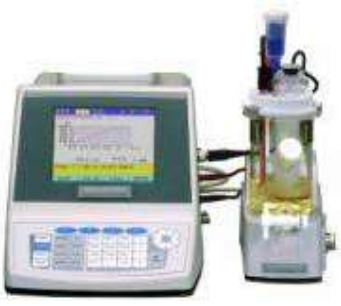
Reagents

・Direct	Anode solution	Hydranal® Coulomat AG-H	100mL
	Cathode solution	Hydranal® Coulomat CG	1 ampule
・Indirect	Anode solution	Hydranal® Coulomat AG	100mL
	Cathode solution	Hydranal® Coulomat CG	1 ampule
	Solvent	Dehydrated toluene	5mL / measurement

Instruments

For Direct method

AQ-300 **Or**



Plus

For Indirect method

EV-2000L Oil Evaporator

Procedure

・Direct	・Indirect
1.Press SAMPLE key and immediately inject approximately 1g sample into the cell once the background stabilized. 2. Press TITRATION key to start titration. 3. Weigh the syringe accurately after sample inject and press S.SIZE/No. key to input the sample quantity.	1. Set switching valve at SOLVENT to inject 5 mL of toluene into the evaporation chamber of EV-2000L and eliminate blank with flowing N_2 carrier gas. 2.Press SAMPLE key and immediately inject approx.1g of sample into the evaporation chamber of EV-2000L after the background stabilized. 3. Press TITRATION key to start titration. 4. Weigh the syringe accurately after sample injection and press S.SIZE/No. key to input the sample quantity.

Condition parameters

Parameters for AQ series

	Direct	Indirect
Cal Mode	0	0
Interval Time	40 sec	15 sec
S-Timer	1 min	0 min
T-Timer	0 min	7 min
Current	SLOW	SLOW
Blank Value	0.0 µg	0.0 µg
Cal Factor		
Unit Mode	AUTO	AUTO
Back Ground	ON	ON
Auto Interval	0.00000 g	0.00000 g
Minimum Count	5 µg	3 µg

[EV-2000L]

N_2 gas flow rate: 50 mL/min

Heating temperature: 120 ºC

For more information, please feel free to contact:

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