



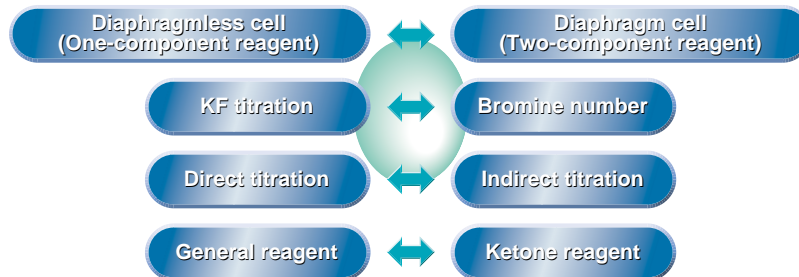
Coulometric method

Karl Fischer Moisture Titrator MKC-510N



The pictures shows the system with KFC-510S(option)

• Titration cell can be increased to 2 units.



Karl Fischer Moisture Titrator

MKC-510N

Karl Fischer titration is the most reliable method for the determination of moisture content. It titrates for quantitative analysis for moisture in solids, liquids and gases.

The MKC-510N as a microprocessor controlled coulometric titrator are one of the best instruments to accurately measure very low levels of moisture in samples in a few minutes. Therefore, the MKC-510N is widely used for Karl Fischer titration throughout the world.

Features

Features of MKC-510N

1) Titration cell can be increased to 2 units.

Once the optional stirrer and titration cell are added, two cells can be used alternatively.

2) Diaphragmless cell prevents clogging by the sample.

Single component reagent reduces running costs.

With the optional one-component electrolytic electrode, moisture titration can be performed with anolyte only.

3) Evaporator mounted on Titrator as one unit.

The ADP-511 Evaporator sits perfectly on top of MKC-510N and on-line control of ADP-511 by MKC-510N.

4) Bromine number and index can be measured.

Bromine number and index of petroleum products and fat/oil can be measured in conformance to ASTM D1492.

5) Large LC display screen.

Large LC display screen shows easy-to-operate dialog message as well as easy-to-read measurement results including water content and concentration.

6) Fully conformed to GLP and GMP.

Confirmation and recording measurement precision can be saved up to 30 runs. records the capacity of reagent and its replacement date. Up to 10 operator names can be registered.

7) Vaporizing curve can be displayed.

When the evaporator is connected, vaporizing time can be programmed in advance with the help of vaporizing curve.

8) Interface for external control.

The interface to connect Balance, Printer and Personal computer is now standard.

9) Rigid and light resin main casing.

Main casing is made of corrosion resistant resin as well as rigid and light in weight.

3 types of titrator



MKC-510N

- This model is the popularly used 2-component electrolytic cell (**Diaphragm cell**), and is ideal for measurement of micro amount of water in about a few tens ppm.



MKC-510N-S

- This model uses a 1-component electrolytic cell (**Diaphragmless cell**), and is useful for measurement of a sample like heavy oil or paint, which would contaminate the diaphragm during moisture titration.



MKC-510N-SP

- This model of 1-component electrolytic cell (**Diaphragmless cell**) is equipped with Stirrer unit P (with pump), which automates dispensing and draining of KF reagent by one-touch operation.

Specification

Type and Model	MKC-510N Karl Fischer Moisture Titrator
Measuring method	Coulometric method
Range	10 μ g to 100mg H ₂ O, 89 μ g to 89mg Br ₂
Sensitivity	0.1 μ g H ₂ O
Control method	Constant current pulse control
Endpoint detection	With polar potential detected by two-pin Pt. electrode, endpoint is determined by coulomb consumed for electrolysis
Precision	Within 0.3% RSD after 10 measurements of water methanal of 1mg H ₂ O
Measuring cell	Capacity 100mL (Max. 150mL)
Drift level	Auto/Manual/Cancel compensation can be switched. Drift level is shown on display at all times.
Display	1) 30 characters by 7 lines LCD 2) Displays (1) Drift level (0.1 to 2 digits μ g/s) (2) Measured water content (3) Data by built-in computation (4) Messages: Pre-titr: per-titration Ready: ready for measurement Stable: drift in stable condition
Individual method	Individual method of 5 Kinds parameters including direct method, ADP-511 connected, bromine index and number, etc.
Endpoint indication	Electronic beep

Calculation	1) Concentration calculation and statistics including mean value, standard deviation and relative standard deviation 2) Bromine index and number and statistics including mean value, standard deviation and relative standard deviation 3) Re-calculation function
Error messages	Erroneous key entry for operation or calculation, anolyte capacity overdue, catholyte capacity overdue, abnormal electrolysis, malfunctioning electrode, over titration, etc.
Required reagent	1) Anolyte: 100mL 2) Catholyte: 5mL
Additional functions	When ADP-511 Evaporator is connected: (1) Setup and storage of oven temperature and measurement sequence (2) Setup and storage of aging sequence
External control	1) RS232C for printer 2) RS232C for balance 3) RS232C for computer
Ambient condition	Temperature: 5 to 35°C Humidity: less than 85%RH
Power source	AC100/120/220/230/240V, 50/60Hz
Power consumption	50W
Dimension	Main unit: 274(W)×400(D)×200(H) Cell unit: 118(W)×225(D)×330(H)
Weight	10kg

Standard components :

	MKC-510N	MKC-510N-S	MKC-510N-SP
Main unit	1	1	1
Magnetic stirrer	1	1	-
Stirrer unit P	-	-	1
Titration cell unit (with 2 component cell)	1	-	-
Titration cell unit (with 1 component cell)	-	1	1
Drain bottle	1	-	-
Funnel	1	1	-
Septum	10	10	10
Anode adjuster	1	-	-
Power fuse (T3.15A/250V for 100V/200V) (T1.6A/250V for 220V/230V/240V)	2 2	2 2	2 2

Options :

Impact dot printer (ink ribbon type, including connection cable)-----IDP-100
 Data capture software (for personal computer)-----SOFT-CAP_E
 Connecting cable (IBM-PC compatible)-----#030-0002

3 types of external cell (option)



KFC-510D

• This is the titration cell unit additional to the 2-component cell (Diaphragm cell), which also can be used for measurement of bromine number.



KFC-510S

• This is the titration cell unit additional to the 1-component cell (Diaphragmless cell).



KFC-510SP

• This is the titration cell unit additional to the 1-component cell (Diaphragmless cell) equipped with Stirrer unit P (with pump) as an automatic dispenser.

Optional Accessories

Evaporator

ADP-511



For measurement of solid sample or samples which cannot directly be put into the electrolyte, the moisture evaporator ADP-511 works for it. The ADP-511 is easy to operate and maintains steady conditions while vaporizing moisture contained in a sample. The ADP-511 heats the sample in closed heating chamber. The vaporized moisture in oven is carried into the titration cell by nitrogen gas. The settings of sample boat maneuver, vaporizing temperature and carrier gas running duration, and other conditions for each method are controllable by storing them in memory of the MKC-510N

Coulometric Karl Fischer Titrators :

MKC-500



Specification

Type and model name	ADP-511 Moisture Evaporator
Heater	Electrically conductive clear heater glass
Temperature range	Room temp. to 300
Temperature control	1) Control method: proportional 2) Setting range: 0 to 300 3) Minimum temperature setting: 1 4) Temperature precision: ± 2 5) Temperature sensor: Chromel-alumel thermocouple
Display	1) LED digital 2) Temperature display: $\square\square\square\square$ 3) Flow display: $\square\square\square\square$ mL/min
Heater tube	Pyrex glass tube OD30 \times 270Lmm
Sample boat	1) Pyrex glass 2) 68(L) \times 25(W) \times 15(H)mm capacity 16mL
Carrier gas	1) Nitrogen is not included in supplied parts. Nitrogen gas, governor and tubing is prepared by user. 2) Air pump is not included in supplied parts.
Gas dryer	1) Silica gel: 100g1 2) Zeolite: 100g1
Gas flow	100 to 300mL/min
Connection to KF Titrator	Directly mounted on MKC-510N
Ambient condition	Temperature 5 to 35 , below 85%RH
Power	AC100/120/200/230/240V, 50/60Hz
Power consumption	150W
Dimension	297(W) \times 206(D) \times 200(H)mm(330mmH when mounted on MKC-510N)
Weight	Approx. 5kg
Standard components and parts	(1)ADP-511 Evaporator.....1 (5) Tube (240mm)..... 2 (2) Heating unit.....1 (6) Hose joint 6..... 1 (3) Desiccant tube.....1 (7) Operation manual..... 1 (4) Heater tubing.....1
Standard accessories	(1) Silica gel 500g..... 1 (5) Sample boat..... 3 (2) Zeolite 500g..... 1 (6) Cautions sticker..... 1 (3) Bubbler tube..... 1 (4) Boat control rod..... 1

Features of the MKC-500

A low cost titrator, yet offers the same accuracy as the MKC-510N ; 10 μ gH₂O measuring range, and 0.1 μ gH₂O detection sensitivity. Electronic balance, printer and RS-232C external ports as standard.

Range	10 μ g - 100mg H ₂ O
Sensitivity	0.1 μ g H ₂ O
Display	16 digits X 1 line LCD
External I/O	* Printer via RS-232C * Balance via RS-232C * Computer via RS-232C
Output	H ₂ O, concentration, dialog messages
Ambient condition	5 - 35 , less than 85%RH

KEM

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