Water determination in oil and fuel samples

Conform to standard ASTM D 6304

aquamax KF PRO OIL

made by ECH

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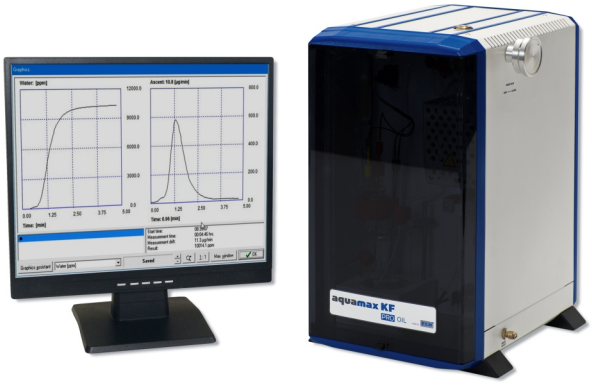
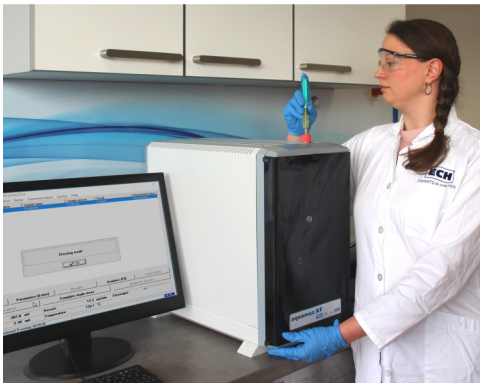
Product description

The Aquamax KF PRO Oil is the perfect instrument to measure ppm water in oils and fuels without the worry of interference side reactions caused by additives or sulphur/ mercaptans. The unique "closed loop" principle means no additional carrier gas is necessary. Directly injecting the sample in to the oven means no blank value is required, making the Aquamax KF PRO Oil a truly accurate, trace level water in petroleum products titrator.
Learn more about your oils by using the temperature ramping program. This unique ECH feature allows you to see all various types of bonded water, making the Aquamax KF Pro Oil the perfect tool in the R & D, Refining, Used Oil analysis laboratories and lubricant blending plants. Crude oils are also perfectly analysed as we have the ability to display both free and bonded water.
All Aquamax KF PRO Oil parts are totally enclosed making this system completely safe and robust for use in the demanding petroleum industry. The ECH technique allows a very long reagent life, because its capacity can be used completely.



The Aquamax KF PRO Oil fulfils the requirements of the standard ASTM D 6304: Standard Test Method for Determination of Water in Petroleum Products, Lubricating Oils and Additives by Coulometric Karl Fischer Titration.



Applications

- Transformer oils
- Hydraulic oils
- Engine oils
- Gear oils
- Crude oils
- Fuel oils
- Gasoline
- Diesel
- A1 Jet fuel
- Military jet fuel
- Bio fuel
- Petroleum products
- Insulating oils
- Silicone oils
- Lubricating oils
- Biopetroleum
- Biological oils

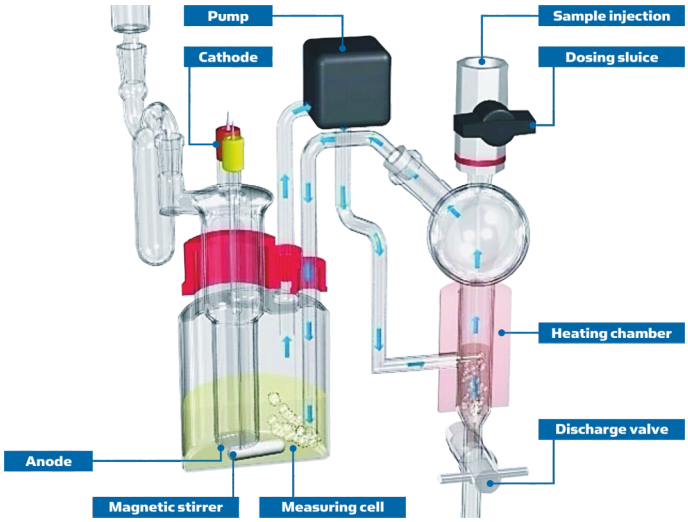
Advantages

- Closed loop principle does not allow methanol to evaporate from the KF solvent
- Reagent capacity is used completely
- Additive and Sulphur side reactions minimized
- By using of temperature programs it is possible to separate free and chemically bonded water
- Temperature ramping program allows you to distinguish between various types of bonded water
- No blank value meaning true ppm accuracy
- Aquamax KF PRO Oil can be used in the laboratory or used as part of a mobile lab when taking a measurement from the sample point is critical
- Compact and rugged device

Features and results

Water extraction of the samples at temperatures 35 °C up to 250 °C, e. g.:

- Constant temperature
- Individually set up temperature programs
- Freely selectable temperature ramp
- Time-controlled temperature programs for step-by-step heating
- Type of result: µg, µg/L, mg/L, mg/kg, ppm, %, by using the formula generator



Closed-loop carrier gas circulation

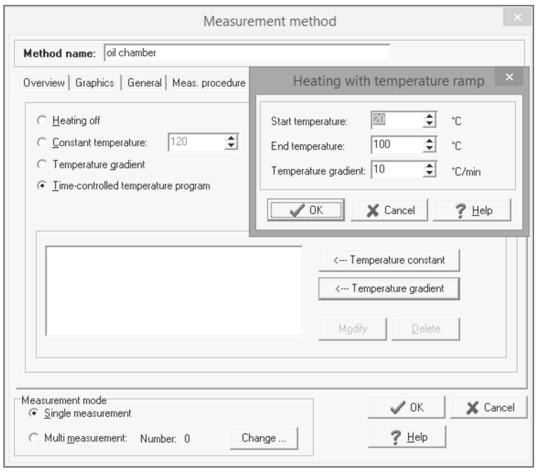
Water determination in oil and fuel samples

Sample	Dosing volume [mL]	Water content [ppm]	Measurement time [min]	Heating temperature [°C]
Transformer oil	2 - 5	9.5 ± 0.4	3 - 4	120
Compressor oil	2 - 5	34.4 ± 0.7	3 - 4	120
Lubricating oil	2 - 5	23.9 ± 0.5	3 - 4	120
Silicone oil	1 - 2	308 ± 2	4 - 8	70
Used oil	0.5 - 1	641 ± 10	8 - 10	120
Hydraulic oil	0.5 - 1	1415 ± 9	6 - 8	100
Engine oil (used)	0.5 - 1	1826 ± 9	8 - 12	120
Linseed oil	1 - 2	856 ± 3	7 - 10	60

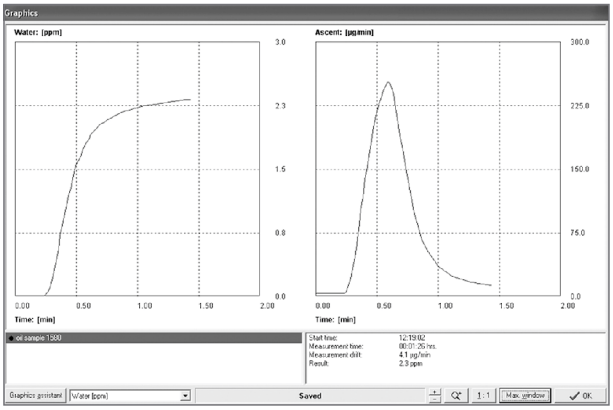
Method Conformity

The Aquamax KF series of coulometric Karl Fischer titrators can be used for the following standard methods:

ASTM	D 1364	Volatile solvents
ASTM	D 1533	Insulating liquids
ASTM	D 3401	Halogenated organic solvents
ASTM	D 4928	Crude oils
ASTM	D 6304	Petroleum products
ASTM	D 6869	Plastics
ASTM	D 7995	Total Water in Liquid Butane
ASTM	E 1064	Organic liquids
API	Ch. 10.9	Crude oil
BS	6829:1.5	Surface active agents
DIN	51777	Petroleum products
DIN EN	60814	Insulating liquids - Oil-impregnated paper and pressboard
DIN EN ISO	12937	Petroleum products
EI / IP	386	Crude petroleum
EI / IP	438	Petroleum products
IEC	60814	Insulating liquids
ISO	TC 158/SC	Natural gas and gas substitutes
ISO	10101-1	Natural gas
ISO	10101-3	Natural gas
ISO	10337	Crude petroleum



Preparation of measurement with temperature ramp



Dual Graph Display shows live result and titration profile

Technical specifications

Measurement method:	Coulometric Karl Fischer titration
Sample administration:	Manually with syringe
Sample amount:	0.01 ... 20 mL
Heating temperature:	35 ... 250 °C, isothermal or with temperature program
Blank value:	0 µg
Measuring range:	0.0001 ... 100 %
Power supply:	230 V/50 Hz; 115 V/60 Hz
Dimensions:	33 x 39 x 48 cm (W x D x H)
Weight:	17 kg
Device control:	PC software (PC not included in the scope of delivery)

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