

# aquamax KF Online

## Online water determination in petroleum products

### Product description

The gas extraction is the ideal method to detect moisture in oil samples and viscous substances. The Aquamax KF Online is suitable for the continuous analysis of water in oil samples.

Trace amounts of water can be measured with the special heating chamber for oils. The sample has no contact with the reagent. Therefore the consumption of reagent is low and the detection sensitivity is high. The oil sample is transferred automatically from sampling point of running process by using the pump module. The sample is injected into heating oven without any contamination. Oil sample volumes can be used in a range from 0.01 up to 20 mL depending on water content.

The sample can be heated out with temperature program or isothermal heating. The measurement is carried out in the measuring cell with titration method according to Karl Fischer. After analysis, the used oil sample flows out through a valve or returns to the running process. With closed-loop carrier gas circulation, any additional gas drying is no longer necessary: the carrier gas is continually titrated to dryness within the closed loop. The total dryness of the gas enhances the moisture desorption from the sample. Moreover, sensitive samples can be heated out very gently. Degradations and side reactions are eliminated.



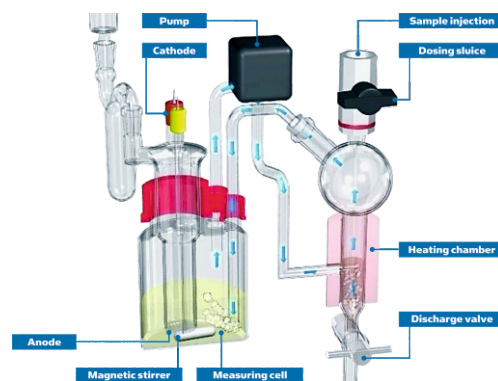
Aquamax KF Online for online water determination

### Applications

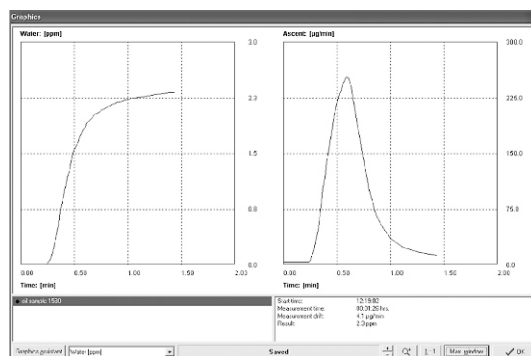
- Transformer oil regeneration
- Oil treatment plant
- Refineries
- Pipelines
- Crude petroleum monitoring

### Advantages

- Closed-loop carrier gas circulation
- No contact of sample with the reagent
- Low consumption of reagent
- Water determination down to 0.1 ppm
- Absolute measurement without calibration or titer determination
- No sample preparation
- For sample amounts from 0.01 up to 20 mL
- Short measuring time
- No blank value, low drift
- Freely selectable heating temperature
- Return of oil sample into system possible
- Applicable for monitoring over long period



Closed-loop carrier gas circulation



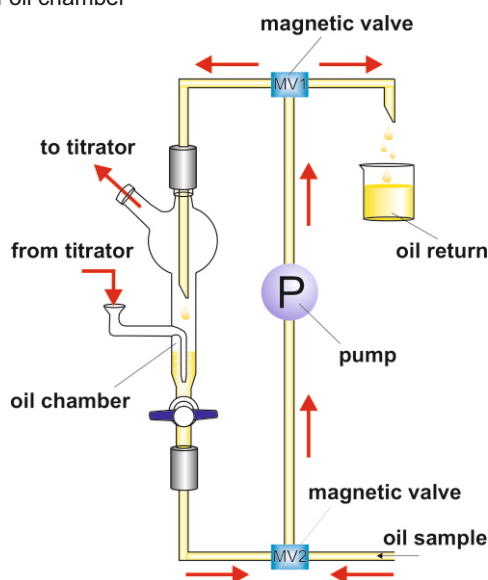
Measurement of mineral oil

## Features and Results

The sample ways are coupled directly with monitoring process. Thereby the oil sample is transferred into the Aquamax KF Online without any contamination. The sample transfer can be adjusted to an automatic procedure.

The control system is adjustable for various parameters:

- Delivery rate of dosing pump
- Rinsing steps
- Emptying of oil chamber



Principle of automatic sampling and circulation

Preparation of measurement procedure

Date	File name	Start time	Sample name	Sample amount	Result	Carried out by
19.11.2015	2015111900	13:36:35	Oil 1	2.000 ml	26.6 ppm	.....
19.11.2015	2015111901	13:40:44	Oil 1	2.000 ml	25.4 ppm	.....
19.11.2015	2015111902	13:44:16	Oil 1	2.000 ml	25.7 ppm	.....

Evaluation of sub measurements	
Statistics	Arithmetical mean: 25.9 ppm
	Standard deviation: 0.6 ppm
	Rel. standard deviation: 2.51 %

Result overview

## Technical specifications

Sample administration: Automatically with high resolving ceramic dosing pump

Sample amount: 0.01 ... 20 mL

Heating temperature: 35 ... 150 °C

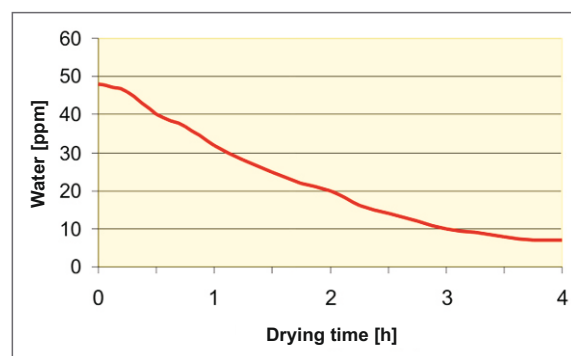
Measuring range: > 0.1 ppm

Type of result: µg, µg/L, mg/L, mg/kg, ppm, %, by using the formula generator

Power supply: 230 V/50 Hz; 115 V/60 Hz

Dimensions : Approx. 600 x 720 x 370 mm (W x H x D)

Weight: Approx. 53 kg



Drying process of oil treatment plant

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