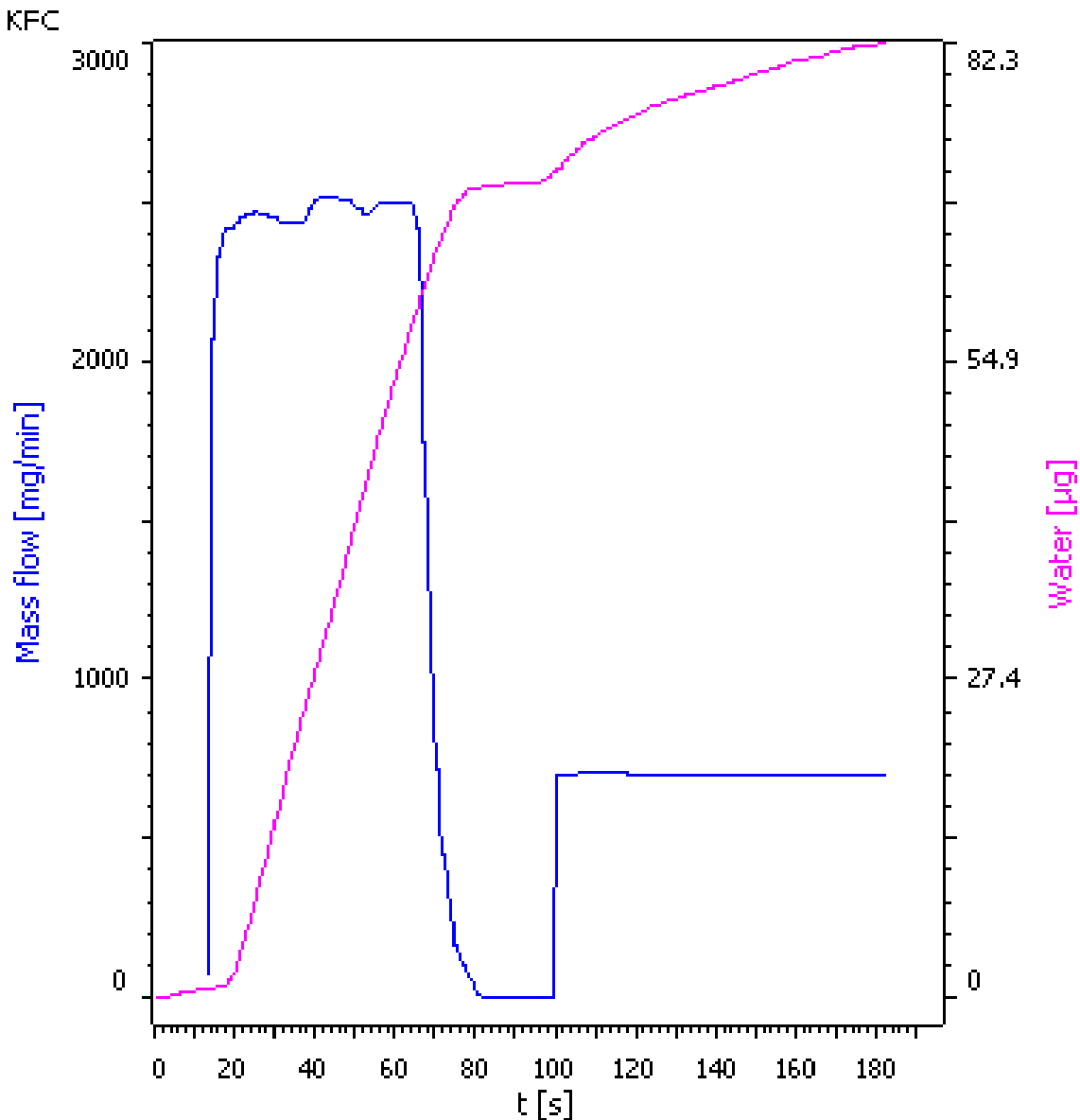


Determination of water in dimethyl ether (DME)



This Application Note describes the automated determination of the water content in biogas-derived dimethyl ether using the 875 KF Gas Analyzer. Dimethyl ether is used as a propellant in the aerosol industry and is classified as “non-ozone depleting” in Montreal and Kyoto Protocols.

Method description

Samples

Dimethyl ether, liquid in pressurized cylinder

Sample preparation

The sample cylinder is connected to the 875 KF Gas Analyzer with the appropriate connectors. To sample the liquid phase it was installed upside down; to sample the gas phase it was installed the other way round. Generally, we recommend analyzing the liquid phase.

Configuration

875 KF Gas Analyzer	2.875.9020
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Reagents

HYDRANAL®-Coulomat AG-Oven	Fluka 34739
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HYDRANAL®-Coulomat CG	Fluka 34840
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Nitrogen (> 99.999, < 5 ppm H ₂ O)
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Analysis

System preparation

To prepare the system, it is first flushed with sample followed by drying with nitrogen. As the water content of the sample might be very low, it is important to have a low start drift (if possible below 10 µg/min).

Method

To measure the sample the method "Sample_measurement.mmet" is used. The method is programmed in *tiamo*[™] which is preinstalled on every Gas Analyzer system.

Sample determination

The default method parameters were used. The minimum sample amount for all measurements is 2000 mg. The first measurement before each series is discarded.

Results

Sample	Mean / [ppm]	RSD / [%]
Dimethyl ether (l)	32.7 (n = 10)	1.62
Dimethyl ether (g)	35.7 (n = 10)	4.29

l: liquid phase; g: gas phase