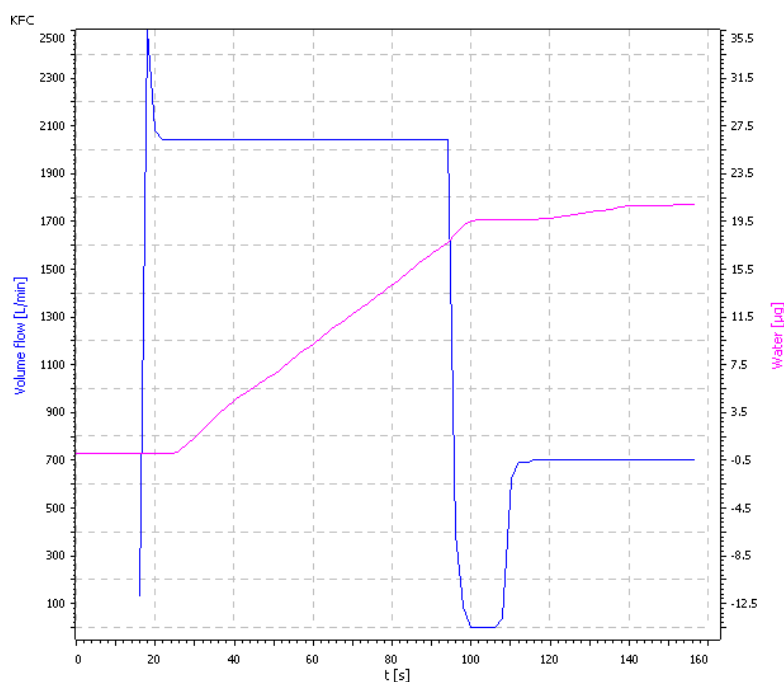


KF Application Note K-055

Validation of the 875 KF Gas Analyzer with certified reference gas



This Application Note describes the automated determination of the water content in certified reference gas with the 875 KF Gas Analyzer.

Method description

Sample

Certified reference gas H₂O in N₂, 10.91 ppm (μmol/mol), equals 7.02 ppm (μg/g).

Sample preparation

The sample cylinder is connected to a pressure reduction valve. The pressure reduction valve is then connected to the 875 KF Gas Analyzer with the appropriate connectors. The secondary pressure of the pressure reduction valve is set to 2.5 bar.

Electrodes

Double Pt Electrode	6.0344.100
Generator electrode with diaphragm	6.0341.100

Reagents

HYDRANAL®-Coulomat AG-Oven	Fluka 34739
HYDRANAL®-Coulomat CG	Fluka 34840
Nitrogen 5.0 (> 99.999, < 3 ppm H ₂ O)	

Instruments

875 KF Gas Analyzer	2.875.9020
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Analysis

System preparation

To prepare the system, it is first flushed with sample and subsequently dried with nitrogen. Because of the very low water contents, the start drift must be very low.

Method

To measure the sample, the preinstalled *tiamo*TM method "Reference measurement.mmet" is used to calculate the mass flow. For that, the volume flow value of the mass flow controller is multiplied with the density of nitrogen at 0 °C and 1.013 bar which is 1.2504 g/L.

Sample determination

For all measurements, a sample amount of approximately 2000 mg is used.

Results

Mean / [ppm] (n = 15)	Recovery rate / [%]	RSD / [%]
7.1	101.9	0.89

Comments

The system could be verified with the reference gas. The correct water content was found for the reference gas with a recovery rate of 101.9% and a RSD of 0.89%.