

KF Application Note No. K- 10

Title: Water in coal dust

Summary: The water content of coal dust is determined according to Karl Fischer. Because of the low water content of the voluminous sample the oven method (nitrogen, 270 °C) and coulometric titration have to be used.

Sample: Coal dust

Sample Preparation: none

Instruments and Accessories: 737 KF Coulometer, cell without diaphragm, 707 KF Drying Oven, 728 Magnetic Stirrer, printer, compressed gas cylinder with nitrogen

Analysis: Dry the sample boats in an oven at 200 °C for 30 min and then allow them to cool in a desiccator.
Heat the 707 KF Drying Oven to 270 °C and set the flow rate of the nitrogen to 100 mL/min. Thorough conditioning of the titration cell is a prerequisite for correct analyses. Weigh exactly ca. 1 g sample into a dry sample boat. Start the determination with the «start» button on the 707. During the purge time put the sample boat into the cold compartment of the oven and close the oven tube. After the purge time the sample boat is automatically transported into the hot oven compartment.
The blank of the sample boats is determined in the same way.

Reagents:

Hydranal Coulomat AG (Riedel-de Haën)

Results: AVG(5) = 0.44 +/- 0.004 % water

Settings:	707 KF Oven	737 KF Coulometer
temperature	270 °C	d.start 20 ug/min
unit gas flow:	mL/min	extr. 60 s
min. gas flow	70 mL/min	stop drift: auto
gas type	N ₂	delay time 3 s
purge time	15 s	report: full
cond.time	0 s	