

DATA BULLETIN

CN analysis of carbon loads of up to 50 mg absolute with UNICUBE® trace

The analysis of larger sample weights is a straightforward approach to reach a better representativeness of an inhomogeneous sample. However, the combustion of larger samples will produce more combustion gases, which need to be handled by the combustion analyzer. As a consequence and in order to guarantee the right analytical results, high loads of produced CO₂ must not influence the peak focusing or interfere with the detection of other elements.

Anthracene is a polycyclic aromatic hydrocarbon with a theoretical carbon concentration of 94.34 % and therefore well suited to test instrument behavior under high loads of CO₂. The anthracene samples were weighed into tin foils and analyzed with a standard method.

SAMPLE	WEIGHT [mg]	C [mg abs.]	C [%]
Anthracene (C = 94.34 %)	53.290	50.27	94.26
	53.270	50.25	94.28
	53.055	50.05	94.41
	53.025	50.02	94.44
	53.099	50.09	94.32
	53.111	50.10	94.35
	53.222	50.21	94.26
mean value			94.33
absolute standard deviation			0.07

The analyses demonstrate the extraordinary dynamic measurement range of UNICUBE trace. Even carbon loads up to 50 mg absolute can be reliably combusted. The combustion gases were separated without any artifacts and the elements were detected with high accuracy (relative standard deviation <0.1 %). The maximum sample capacity of UNICUBE trace is therefore unprecedented for a micro sample analyzer. In combination with a limit of quantification of <1 µg, the dynamic measurement range of UNICUBE trace is unique in the industry.

UNICUBE trace combines this extraordinary versatility with functional design for ease of use (e.g., tool-free maintenance) and lowest noise emission in the combustion analysis industry.

INSTRUMENT:
UNICUBE® trace

DETAILS:
mode: CN
sample: 53 mg Anthracene



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