

Simultaneous CHNS analysis of pure chemicals with the vario MICRO cube

The vario MICRO cube is optimized for the simultaneous CHNS analysis of chemicals.

Task

Analyzer		Sample	
Base:	vario MICRO cube	Weight:	1-2 mg
Mode	CHNS	Consistency:	Solid/liquid

Specification

Peripherals: Microbalance Preparation: -----

The samples are weighed with a microbalance, wrapped in tin foil and analyzed with a standard method.

Procedure

For small sample weights the quality of the balance is of highest importance. A weighing error of only $\pm 5 \mu\text{g}$ results in an error of $\pm 1\%$ for a 1 mg sample with 50% carbon content.

Sample (N=6)	N [%]	C [%]	H [%]	S [%]
Sulphanilic acid (Theory)	8.09	41.61	4.07	18.51
Mean [%]	8.14	41.54	4.01	18.51
Std.dev. abs [%]	0.019	0.03	0.01	0.06
Methionine (Theory)	9.39	40.25	7.43	21.49
Mean [%]	9.38	40.16	7.36	21.42
Std.dev. abs [%]	0.08	0.05	0.01	0.08

Results

These results are examples for the performance of the vario MICRO cube. All four elements are analyzed simultaneously with highest precision and accuracy. Sample preparation is reduced to a minimum, simple weighing and wrapping in tin is sufficient.