

Analyzing small samples with the vario MICRO cube

Frequently laboratories in universities and the pharmaceutical industry attach great importance to smallest sample sizes (< 1 mg). Samples can either be very valuable or they pose a potential danger which prohibits larger sample sizes.

Task

	Instrument		Sample
Basic device:	vario MICRO cube	Amount:	~ 0.5 mg
Mode:	CHNS	Consistency:	solid
Peripheral:	Microbalance	Preparation:	Not necessary

Specification

The samples are wrapped in tin or silver foil. For samples in the sub-milligram range, special care has to be taken concerning the quality of the balance and the weighing process. Even small inaccuracies in this step corrupt the final result of the analysis.

Procedure

Sample (N= 6)	N [%]	C [%]	H [%]	S [%]
Citric acid (theory)	-	37.47	4.16	-
Mean [%]	-	37.48	4.05	-
SD abs. [%]	-	0.06	0.02	-
Sulfanilamide (theory)	16.26	41.81	4.65	18.62
Mean [%]	16.20	41.74	4.65	18.60
SD abs. [%]	0.08	0.10	0.07	0.09

Results

The vario MICRO cube is optimized for the analysis of smallest sample sizes. Weighed samples in the microgram range are no problem, often the data quality is limited by the balance and the weighing process.