

DATA BULLETIN

CHNS determination in soil and sediment using the vario EL cube with IR detector for low S content

The elemental composition characterization of soils provides important insights for soil quality and soil fertility assessment. The large measurement range and low detection limits of vario EL cube are unique. For samples with an extremely low sulfur content, the vario EL cube can be equipped with an IR detector.

The samples were weighed into tin boats. The utilized sample weight ranged between 15 and 100 mg. All samples were analyzed 3–4 times. The average CHNS content and its absolute standard deviation are given below.

SAMPLE	C [%]	H [%]	N [%]	S [%]
soil	6.69 ± 0.002	0.17 ± 0.002	0.027 ± 0.007	0.0094 ± 0.0008
aeolian sediment	1.51 ± 0.001	0.30 ± 0.016	0.030 ± 0.007	0.0067 ± 0.0006
sand	0.16 ± 0.003	0.041 ± 0.001	0.010 ± 0.001	0.040 ± 0.0024
marine sediment	4.50 ± 0.035	1.10 ± 0.014	0.40 ± 0.001	1.54 ± 0.042
marine sediment	15.0 ± 0.14	1.75 ± 0.022	0.76 ± 0.020	1.93 ± 0.049

Very small differences in the elemental composition of soil and sediment samples can be reliably determined with the vario EL cube. The analyses show extremely low standard deviations for all elements.

The vario EL cube is very well suited for soil and sediment analyses. With an optional IR detector, low sulfur contents can be detected with a very high precision.

INSTRUMENT:

vario EL cube

DETAILS:

mode: CHNS

sample: 15 – 100 mg soil and sediment



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