

Fast determination of the CS content in soil with the rapid CS cube

Task

The rapid CS cube has been developed for fast automatic sulphur content determination by high temperature decomposition and IR detection, which is in agreement with the international standard ISO 15178. The rapid CS cube can optionally be equipped with a second IR detector for simultaneous CS determination.

Instrument	Sample
Basis: rapid CS cube	Quantity: ca. 100 mg
Mode: CS	Consistency: solid
Periphery: micro balance	Preparation: not necessary

Specification

The samples are weighed into tin foil cups. WO₃ has been added in order to bind alkaline and earth-alkaline ions in a ratio 1:1.

Procedure

The instrument has been calibrated using certified soil standards. All samples have been analysed four times. The average CS content and corresponding absolute standard deviation are given below.

Sample	C [%]	S [%]
soil-1	3.39 ± 0.015	0.017 ± 0.004
soil-2	4.24 ± 0.030	0.033 ± 0.0007
soil-3	2.32 ± 0.005	0.0035 ± 0.0005
soil-4	0.14 ± 0.004	0.0039 ± 0.0008

Results

The results show that the C and S content in soil can be determined with a very high precision using the rapid CS cube.

Using the optional IR detector for C, fast detection of carbon and sulphur can be simultaneously performed with the rapid CS cube.

The rapid CS cube is in full agreement with the international standard ISO-15178 on "soil quality – determination of total sulphur by dry combustion".