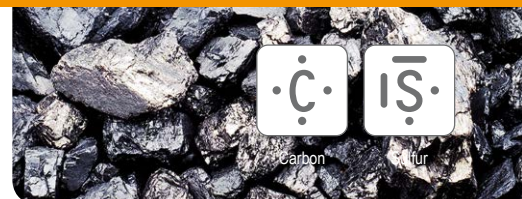


S and C/S determination in coal



Suitable analyzers

- ELEMENTRAC CS-d (Resistance Furnace)

Used accessories

- Disposable porcelain boats (90160)
- Suitable calibration material



ELEMENTRAC CS-d

Application Settings

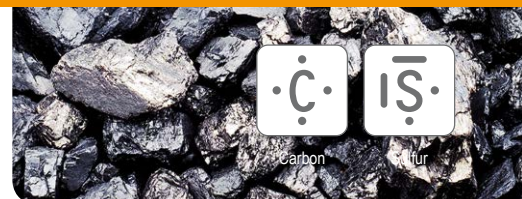
I) General

Temperature:	1350 °C (±20 °C tolerance)
Stabilize baseline:	Enable
Stability:	0.01 V
Minimum time:	20 sec
Maximum time:	60 sec
Flow:	180 l/h
Drift compensation:	Disable

II) Analysis

Channel	Min time [sec]	Max time [sec]	Integration delay [sec]	Peak max [V]	Comperator level [mv]	Comperator peak [%]
High Carbon	60	300	5	8	20	1
Low Sulfur	60	300	5	8	20	1
High Sulfur	60	300	5	8	20	1

S and C/S determination in coal



Sample preparation

For best results grind the sample down to a particle size of approx. 200 µm.

Dry the sample to constant mass at 105 °C (at least 1 hour).

Procedure

- Prepare and clean the ELTRA analyzer (e.g. exchange anhydron, filter, boat stop) and set the furnace temperature to 1350 °C
- Run at least three warm up samples (e.g. ELTRA 92511-3020) with a medium sample weight of 350 mg until the results are consistent
- Calibrate the system with a suitable calibration material (NIST or other)

- (1) Weigh in 350 mg of sample in a porcelain boat (90160)
- (2) Start analysis (F5 Button)
- (3) Wait until baseline is stable
(Look at message in ELEMENTS software and wait for green light at the resistance furnace)
- (4) Load the sample into the furnace and wait until the PC calculates results
- (5) Remove combustion boat

Repeat steps (1) – (5) at least three times;

Mark the results and use the calibration function in the software.

-> Now start with the actual analysis.

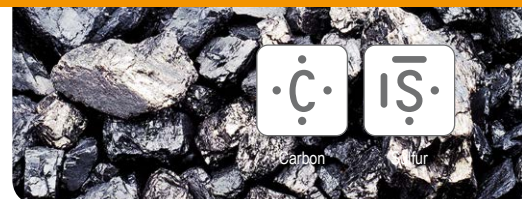


Typical results		
ELTRA 92550-3060(LOT 782614) *1		
Weight (mg)	Carbon (%)	Sulfur (%)
351.6	61.24	6.18
350.0	61.48	5.93
349.2	60.68	6.14
360.0	60.69	6.16
355.8	61.42	6.21
360.1	59.95	6.19
342.1	59.78	6.22
372.0	60.10	6.22
348.2	60.7	6.26
365.2	60.45	6.24
Average Values		
	60.65	6.18
Deviation / Relative deviation (%)		
	0.59 (1%)	0.09 (1.5%)

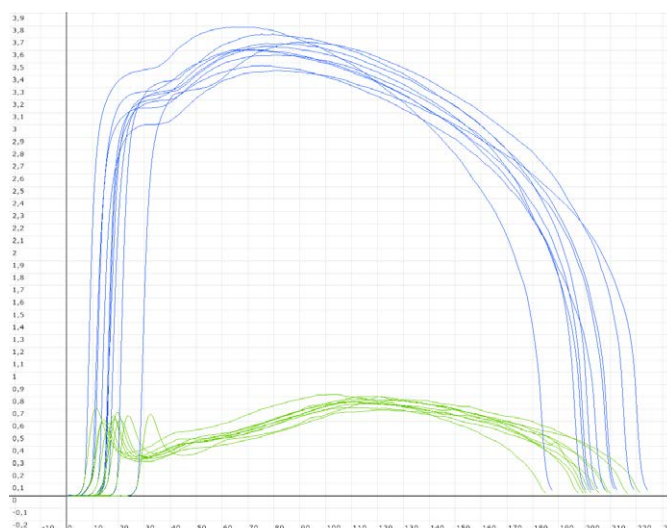
*1 certified values: C: 60.65% ±0.82 ; S: 6.18 ±0.14



S and C/S determination in coal



Typical results		
ELTRA 92511-3030 (LOT 705114) * ²		
Weight (mg)	Carbon (%)	Sulfur (%)
338.2	70.2	1.14
350.6	69.5	1.15
351.2	70.0	1.17
360.5	69.7	1.13
362.5	69.6	1.15
345.2	68.6	1.12
365.8	69.7	1.13
349.0	69.2	1.15
350.1	69.4	1.11
351.3	70.6	1.08
Average Values		
	69.7	1.14
Deviation / Relative deviation (%)		
	0.54 (0.8%)	0.02 (2.2%)



*² certified values: C: Informative, not certified; S: 1.14 ±0.06