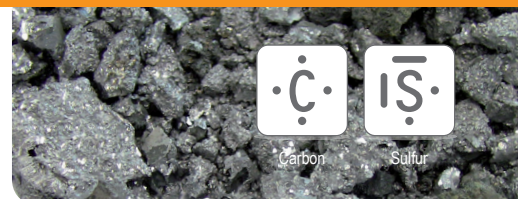


Carbon and sulfur determination in furnace slag



Suitable analyzers

- ELEMENTRAC CS-*i*

Used accessories

- Ceramic crucibles (90149)
- Tungsten (90220)
- High purity iron accelerator (88600-0013)
- Suitable calibration material (NIST or other)



ELEMENTRAC CS-*i*

Application Settings

I) General

Sample type:	Advanced
Standby flow:	10 l/h
Purging while closing:	no
Open Furnace:	yes
Furnace purge through:	Exhaust
Furnace purge time:	3 sec
Furnace purge flow:	180 l/h

Stabilizing

Stabilize by time:	on
Stabilize duration:	20 sec

II) Analysis

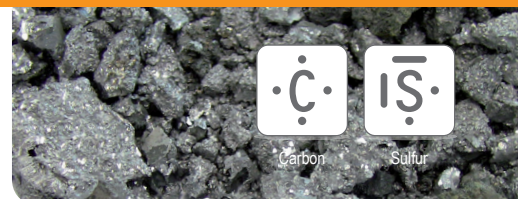
Voltage:	100 %
Power duration:	90 sec
Flow:	180 l/h
Chamber only:	5 sec
Lance and chamber:	5 sec
Drift compensation:	on

Channel	Max time [sec]	Min time [sec]	Integration delay [sec]	Comparator peak [%]
High C	90	60	5	0.1
High S	90	60	5	0.1

III) Postwaiting

Postwaiting time:	10 sec
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Sample preparation

Make sure that your sample is free from contaminations and inclusions which could influence the carbon and sulfur determination. Pre-heat the crucibles at least for 1 h at 1000 °C. Let the crucibles cool down in a desiccator.

Procedure

- Prepare ELTRA analyzer (e.g. exchange anhydrous, sodium hydroxide, platin catalyst if necessary); clean the combustion tube, brush, heat shield, dust trap
 - Run three warm up samples (e.g. steel samples (92400-3050) with a minimum weight of 500 mg; add 1.7 g tungsten)
 - Calibrate the analyzer with suitable calibration material (NIST or other)
- Analysis procedure:
- (1) Weigh in approx. 100 mg of sample into the crucible
 - (2) Add 0.7 g of high purity iron accelerator (88600-0013)
 - (3) Add 1.7 g of tungsten (90220)

Repeat steps (1) – (3) at least three times;

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

→ Now start with the actual analysis.



Measured results (customer sample)			
Slag 09/16			
Id	Weight (mg)	Carbon (%)	Sulfur (%)
Slag_09_16	98.4	7.07	0.90
Slag_09_16	99.5	7.16	0.91
Slag_09_16	98.8	7.17	0.91
Slag_09_16	101	6.89	0.91
Slag_09_16	102.3	6.88	0.91
Slag_09_16	98.8	7.27	0.90
Slag_09_16	101.2	6.92	0.88
Slag_09_16	100.9	6.97	0.91
Slag_09_16	102.3	7.11	0.92
Slag_09_16	100.9	7.13	0.91
Average values			
		7.06	0.91
Deviation / Rel. Deviation (%)			
		0.13 / 1.90	0.01 / 1.05

