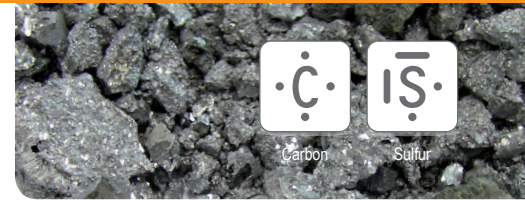


C, S determination in Ferrochrome (High Carbon)



Suitable analyzers

- ELEMENTRAC CS-*i*

Used accessories

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



Application Settings

I) General

Sample type:	Advanced
Standby flow:	10 l/h
Purging while closing:	yes
Open Furnace:	yes
Furnace purge through:	Exhaust
Furnace purge time:	3 sec
Furnace purge flow:	180 l/h

Stabilizing

Lance valve:	on
Stabilize by time:	off
Stability:	0.02 V
Minimum time:	15 sec
Maximum time:	30 sec

II) Analysis

Voltage:	100 %
Power duration:	100 sec
Flow:	180 l/h
Chamber only:	1 sec
Lance and chamber:	1 sec
Drift compensation:	off

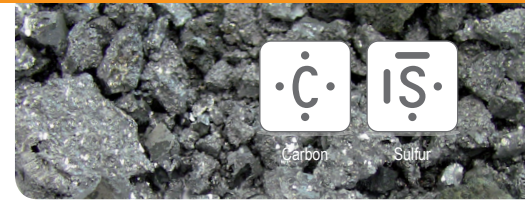
Channel	Max time [sec]	Min time [sec]	Integration delay [sec]	Comparator level [mv]	Comparator peak [%]
High C	80	40	6	20	1
Low S	90	35	10	20	1

III) Postwaiting

Postwaiting time:	10 sec
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Subject to technical modification and errors

C, S determination in Ferrochrome (High Carbon)



Sample preparation

Make sure that your sample is free from contaminations and inclusions which could influence the carbon 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 anhydron, 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)

The procedure of analysis ferrochrome should be like this:

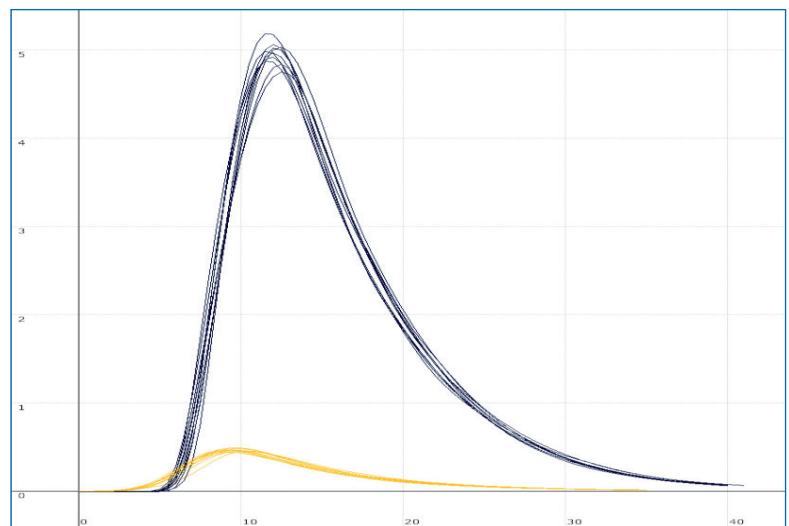
- (1) Weigh in approx. 150 mg of sample into the crucible
- (2) Add 0.7 g of high purity iron accelerator (88600-0013)
- (3) Add 1.7 g of tungsten (90220)

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.**



Typical results		
Euronorm 585-2 ¹⁾		
Weight (mg)	Carbon (%)	Sulfur (%)
149.8	5.50	0.032
150.8	5.46	0.032
150.7	5.50	0.033
157.6	5.50	0.033
149.8	5.46	0.032
150.3	5.47	0.031
154	5.50	0.032
151.8	5.48	0.032
150.4	5.49	0.033
155.7	5.48	0.031
Meanvalue		
	5.48	0.032
Deviation / Relative deviation (%)		
	0.017/0.30	0.001/2.09



¹⁾ certified value: C: 5.48% ±0.02 (0.4%)
S: 0.032% ±0.0012 (3.75%)