ELTRA®
ELEMENTAL ANALYZERS

C, S determination in highly alloyed steel

Suitable analyzers

- ELEMENTRAC CS-*i*

Used accessories

- Ceramic crucibles (90149)
- Tungsten (90220)
- Suitable calibration material (NIST or other)

Application Settings

I) General

Sample type:	Solid sample
Furnace lance time:	2 sec
Furnace purge time:	2 sec
Furnace purge flow:	180 l/h
Drift compensation:	yes
Stabilizing	
Stabilize by time:	yes
Stabilize duration:	10 sec

II) Analysis

Voltage:	100 %
Power duration:	80 sec
Flow:	180 l/h
Lance flush start:	0 sec

Channel	Enable	Peak max [V]	Max time [sec]	Min time [sec]	Integration delay [sec]	Comp. factor [%]
Low C	On	8	80	60	5	0.2
High C	Off	-	-	-	-	-
Low S	On	8	70	45	5	0.2
High S	Off	-	-	-	-	-

III) Postwaiting

Postwaiting time:	10 sec

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Sample preparation

Make sure that the surface of the sample is free from contaminations; otherwise clean the sample with acetone p.a. and let dry at atmosphere. Pre-heat the crucibles at least 1 h at 1000 °C; let the crucibles cool down in a desiccator.

Procedure

- Prepare ELTRA analyzer (e.g. exchange anhydrone, sodium hydoxide, platin catalyst if necessary); clean the combustion tube, brush, heating 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)

  (1) Weigh in approx. 500 mg of sample in the ceramic crucibles (90149)

  (2) Add 1.7 (±0.1) g of tungsten (90220)

  (3) Place the crucible on the pedestal and start analysis

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 - CRM 281-1: Highly Alloyed Steel[1)]		
Weight (mg)	**% C**	**% S**
501.8	0.0482	0.0163
501.4	0.0479	0.0162
503.0	0.0479	0.0161
506.4	0.0481	0.0161
505.6	0.0481	0.0160
498.5	0.0482	0.0160
498.8	0.0477	0.0158
497.5	0.0479	0.0158
501.5	0.0479	0.0158
499.6	0.0479	0.0161
Average values		
	0.0480	0.0160
Deviation / Relative deviation (%)		
	0.0002 / 0.4%	0.0002 / 1.1%

[1)] certified value: % C: 0.048 ±0.002 // % S: 0.016 ±0.001