ELTRA®
ELEMENTAL ANALYZERS

C, S determination in nickel alloy

Suitable analyzers

- ELEMENTRAC CS-*i*

Used accessories

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

ELEMENTRAC CS-*i*

Application Settings

I) General

Sample type:	Advanced
Standby flow:	180 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

Stabilize by time:	on
Stabilize duration:	20 sec

II) Analysis

Voltage:	100 %
Power duration:	80 sec
Flow:	180 l/h
Chamber only:	0 sec
Lance and chamber:	0 sec
Drift compensation:	on

Channel	Max time [sec]	Min time [sec]	Integration delay [sec]	Comparator factor [%]
Low C	80	40	6	0.1
Low S	80	30	6	0.1

III) Postwaiting

Postwaiting time:	10 sec

C, S determination in nickel alloy

Sample preparation

Make sure that your sample is free from contaminations which could influence the carbon and sulfur determination. When necessary cleans the sample with acetone p.a. or use abrasive paper to clean the surface.

ELEMENTRAC CS-*i*

Procedure

- Prepare ELTRA analyzer (e.g. exchange anhydrone, 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 nickel alloys should be like this:
(1) Weigh in approx. 500 mg of nickel alloy
(2) Add 1.7 g of tungsten accelerator (90220)

Repeat steps (1) – (2) at least three times;
Mark the results and use the calibration function in the software.

-> Now start with the actual analysis.

Typical results		
BCS/SS-CRM No. 387/1 Nimonic 901 alloy C: 330 ppm ±20 ppm; S: 28 ppm ±5		
Weight (mg)	**Carbon (ppm)**	**Sulfur (ppm)**
500.1	328	27.4
503.6	332	28.5
500.0	329	27.3
500.1	331	27.9
500.4	329	27.8
501.6	327	28.2
505.7	332	28.3
499.4	328	27.5
501.0	330	28.2
502.1	329	27.5
Average Values		
	330	28
Deviation / Relative deviation (%)		
	1.8 ppm (0.5%)	0.4 ppm (1.5%)