ELTRA®
ELEMENTAL ANALYZERS

C, S determination in machining 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	Off	-	-	-	-	-
High C	On	8	80	60	5	0.2
Low S	On	8	70	45	5	0.2
High S	Off	-	-	-	-	-

III) Postwaiting

Postwaiting time:	10 sec

Eltra GmbH | Retsch-Allee 1-5 | 42781 Haan | Germany | Phone: +49 2104/2333-400 | E-Mail:info@eltra.com | **www.eltra.com**

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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 hydroxide, 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		
ECISS EURONORM - ZRM 079-2: Machining Steel[1)]		
Weight (mg)	**% C**	**% S**
498.9	0.5981	0.1855
498.8	0.5997	0.1928
501.0	0.5930	0.1913
503.0	0.5974	0.1932
506.7	0.5922	0.1930
503.2	0.5984	0.1946
504.5	0.6002	0.1960
504.4	0.5991	0.1949
504.3	0.5902	0.1893
506.5	0.5955	0.1925
Average values		
	0.5964	0.1923
Deviation / Relative deviation (%)		
	0.0035 / 0.6 %	0.0030 / 1.6 %

[1)] certified value: % C: 0.596 ±0.006 // % S: 0.192 ±0.006