

S determination in Soda Lime Silica Glas

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:	Dusty sample
Standby flow:	180 l/h
Open Furnace:	yes
Furnace purge time:	3 sec
Furnace purge flow:	180 l/h

Stabilizing

Stabilize by time:	on
Stabilize duration:	15 sec

II) Analysis

Voltage:	100 %
Power duration:	60 sec
Flow:	180 l/h
Drift compensation:	on

Channel	Max time [sec]	Min time [sec]	Integration delay [sec]	Comparator factor [%]
Low S	60	35	10	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 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 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 glas should be like this:

- (1) Weigh in approx. 100 mg of the sample into the ceramic crucible
- (2) Add 0.7 g of high purity iron accelerator (88600-0013)
- (3) Add 1.7 g of tungsten (90220)
- (4) Place the crucible on the pedestal (use tongs!) and start analysis

Repeat steps (1) – (4) at least three times;

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

-> Now start with the actual analysis.



Typical results	
NCS DC 61103 ¹⁾	
Weight (mg)	SO ₃ (%)
103.5	0.176
103.6	0.175
103.6	0.173
104.3	0.170
102.5	0.166
99.3	0.169
98.3	0.170
102.8	0.166
100.1	0.164
100.8	0.166
Average values	
	0.170
Deviation / Relative deviation (%)	
	0.004/ 2.34

¹⁾ certified value: SO₃: 0.17% ±0.03 (10.60%)

