

S determination in ZnS



Suitable analyzers

- ELEMENTRAC CS-d (Resistance Furnace)

Used accessories

- Disposable porcelain boats (90160)
- Suitable calibration material



Application Settings

I) General

Temperature:	1350 °C (± 20 °C tolerance)
Stabilize baseline:	Enable
Stability:	0.01 V
Minimum time:	20 sec
Maximum time:	60 sec
Flow:	180 l/h
Drift compensation:	Disable

II) Analysis

Channel	Min time [sec]	Max time [sec]	Integration delay [sec]	Peak max [V]	Comperator level [mv]	Comperator peak [%]
High Sulfur	60	300	5	8	20	1

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Sample preparation

Dry the sample to constant mass at 105 °C (at least 1 hour).

Procedure

- Prepare and clean the ELTRA analyzer (e.g. exchange anhydron, filter, boat stop) and set the furnace temperature to 1350 °C
- Run at least three warm up samples (e.g. ELTRA 92511-3020) with a medium sample weight of 200 mg until the results are consistent
- Calibrate the system with a suitable calibration material (NIST or other):

- (1) Weigh in 200 mg of sample in a porcelain boat (90160)
- (2) Start analysis (F5 Button)
- (3) Wait until baseline is stable
(Look at message in ELEMENTS software and wait for green light at the resistance furnace)
- (4) Load the sample into the furnace and wait until the PC calculates results
- (5) Remove combustion boat

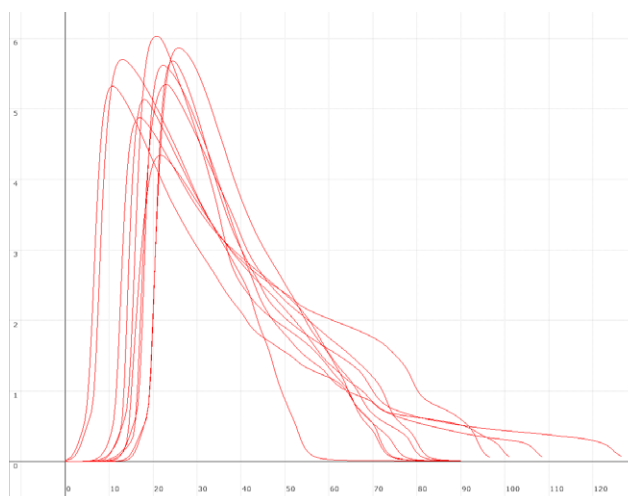
Repeat steps (1) – (5) at least three times;

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

-> Now start with the actual analysis.



Typical results	
ELTRA Zink sulfide 91900-2001 (LOT W28D016) * ¹	
Weight (mg)	Sulfur (%)
334.8	32.91
349.8	32.75
328.4	32.96
359.7	32.87
350.7	33.05
346.0	32.81
354.9	32.78
349.7	32.91
342.2	32.96
351.7	32.96
Average Values	
	32.90
Deviation / Relative deviation (%)	
	0.09 (0.3%)



*¹ certified values: S: 32.9% (without deviation)