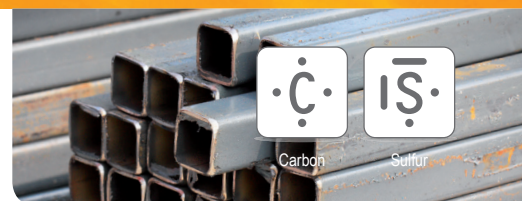


C, S determination in pure iron samples



Suitable analyzers

- CS-800
- CS-2000 (induction furnace)

Used accessories

- Ceramic crucibles (90150)
- Tungsten (90220)
- Suitable calibration material (NIST or other)

Settings

- Comparator level: 10 mV (low C, S Channel only)
- Minimum time: 45 sec
- Maximum time: 3:00 min
- Integration delay: 6 sec
- Post-waiting: 10 sec
- Pre-purging: 15 sec
- Base line deviation: 5 mV
- Base line time: 30 sec
- T1 - Pre-purging: 5 sec
- T2 - Chamber only: 5 sec
- T3 - Chamber and lance: 1 sec
- T4 - Generator: 40 sec



Induction furnace

Sample preparation

Make sure that the surface of the pure iron 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 anhydrous, sodium hydroxide, copper oxide when 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 1.5 g tungsten)
- Calibrate the analyzer with suitable calibration material (NIST or other)
 - (1) Weigh in approx. 500 mg of sample in the ceramic crucibles (90150)
 - (2) Add 1.7 (± 0.1 g) of tungsten (90220)
 - (3) Place the crucible on the pedestal and start analysis

Repeat step (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

Pure iron		
Weight (mg)	ppm C	ppm S
505.4	13.44	17.76
505.4	13.39	15.81
519.8	13.53	15.64
526.6	13.82	15.21
539.7	12.60	15.41
523.4	14.36	16.36
515.8	12.86	15.07
515.6	12.54	15.51
521.5	13.24	17.03
524.8	13.14	15.73
Average values		
	13.29	15.95
Deviation		
	0.55 / 4.16 %	0.86 / 5.37 %