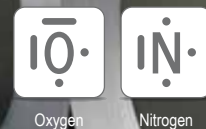


O, N determination in steel samples (Inner and outer graphite crucibles)



Suitable analyzers

- ON 900
- ONH 2000

Used accessories

- Inner graphite crucibles (90180)
- Outer graphite crucibles (90185)
- Suitable calibration material (NIST or other)

Settings

- Comparator level: 5 mV (low oxygen); 20 mV (other)
- Minimum time: 15 sec (oxygen); 35 sec (nitrogen)
- Maximum time: 3:00 min
- Post waiting: 20 sec
- Base line deviation: 20 mV; Step: 16 mV; Time: 10 sec
- Mode: continuous
- Outgas
Time: 45 sec
Power: 5 kW
- Time
Purge: 15 sec
Stability: 45 sec
- Integration delay
IR cell: 2 sec
TC cell: 10 sec
- Analyse (1)
Time: 40 sec
Power (1): 4 kW
Power (2): 4 kW



Sample preparation

Make sure that the surface of the steel is free from contaminations; otherwise clean the sample with acetone p.a. and let dry at atmosphere.

Procedure

- Prepare ELTRA analyzer (exchange anhydrous, sodium hydroxide, copper oxide when necessary), clean furnace, sample drop mechanism, electrode tip
- Run three blanks with empty crucibles
- Calibrate the analyzer with suitable calibration material (NIST or other)
 - (1) Fill one empty inner crucible (90180) in one outer crucible (90185) and place them on the electrode tip, close furnace (F2 Button)
 - (2) Weigh calibration material (usually pins)
 - (3) Place calibration material in the sample drop mechanism and start analysis (F5 Button)

After analysis give the inner crucible into waste and fill in a new one. The outer crucibles can be used approximately 10 times.

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		
Steel: Eltra 91100-1004		
Weight (mg)	ppm O	ppm N
1020.1	152.0	65.8
1016.7	149.4	64.9
1016.7	147.5	65.2
1018.5	151.3	66.1
1016.6	149.6	63.8
1017.1	143.5	65.0
1015.2	137.7	64.7
1015.1	145.4	65.2
1016.4	145.3	64.0
1015.3	143.3	64.6
Average values		
	146.5	64.93
Deviation		
	4.36 / 2.98%	0.71 / 1.09%

Typical results		
Steel: AR 659		
Weight (mg)	ppm O	ppm N
517.7	117.9	67.8
517.4	119.6	65.0
519.0	120.3	66.5
509.4	120.1	66.5
510.4	120.2	68.0
510.7	120.8	68.3
508.6	118.5	66.9
502.9	116.2	65.1
509.1	121.2	67.3
511.0	121.9	67.7
511.0	121.6	70.1
Average values		
	119.67	66.91
Deviation		
	1.69 / 1.42%	1.15 / 1.72%