

# Organic Application Note

## Sulfur and Carbon in Coal, Coke, and Graphite

**Accessories** 529-204 Crucibles

**Calibration Standard** NIST or BCR or other suitable material

**Sample Weight** 0.1 to 0.3 g

### Analysis Time

60 to 300 seconds (sulfur and carbon simultaneously)

**Furnace Temperature** 1350°C

### Comparator Level

Sulfur: 1%

Carbon: 1%

### Preparation

Samples should be -60 mesh and prepared according to ASTM D-2013 "Preparing Coal Samples for Analysis."

### Procedure

1. Prepare instrument as outlined in the operator manual.
2. Condition the instrument by analyzing a few coal samples, until the readings are stable.
3. Calibrate the system by analyzing at least three replicates of the standard used, using the following procedure.
  - a. Weigh 0.1 to 0.3 g of sample into a 529-204 Crucible.
  - b. Click the mouse on Analyze. When the "load furnace" message appears on screen, slide the sample into the combustion tube.
4. Analyze unknown samples following steps 3a and 3b.

### Typical Results

Sample	Weight	% S	% C
Coal #1	0.2614	0.840	85.63
	0.2666	0.837	85.74
	0.2607	0.836	85.27
	0.2953	0.838	85.54
	Mean =	0.838	85.55
	Std. Dev. =	0.001	0.20
Pet Coke	0.2556	0.874	93.38
	0.2574	0.873	93.47
	0.2556	0.874	93.22
	Mean =	0.873	93.36
	Std. Dev. =	0.0007	0.13



Sample	Weight	% S	% C
Graphite	0.1092	0.153	99.22
	0.1018	0.146	98.01
	0.1045	0.161	97.73
	0.1059	0.152	98.43
	0.1049	0.162	97.65
	Mean =	0.155	98.21
	Std. Dev. =	0.007	0.60



LECO Corporation • 3000 Lakeview Ave. • St. Joseph, MI 49085  
Phone 800-292-6141 • Fax 269-982-8977  
info@leco.com • www.leco.com  
ISO-9001:2000 No. FM 24045

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