

Organic Application Note

Sulfur and Carbon in Soils

Accessories 529-204 Crucibles, 502-321 COM-CAT™ accelerator

Calibration Standard NIST or other suitable materials such as LECO 501-034 CaCO₃ and LECO 502-318 Pulp

Sample Weight 0.1 to 0.2 g

Analysis Time 60 to 300 seconds (sulfur and carbon simultaneously)

Furnace Temperature 1350°C

Comparator Level

Sulfur: 1%

Carbon: 1%

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 0.2 g of sample into a 529-204 Crucible and mix well with ~1 g 502-321 COM-CAT.
 - 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	Sample	Weight	% S	% C
Soil #1	0.1563	0.0215	2.76	Soil #3	0.1343	0.0271	1.07
	0.1070	0.0198	2.81		0.1488	0.0248	1.00
	0.1040	0.0210	2.79		0.1501	0.0282	1.14
	0.1067	0.0197	2.80		0.1606	0.0316	1.13
	Mean	= 0.0205	2.79		0.1592	0.0268	1.09
	Std. Dev.	= 0.0009	0.02	Mean	= 0.0277	1.09	
Soil #2	0.1158	0.0857	13.69	Std. Dev.	= 0.003	0.05	
	0.1117	0.0848	13.58				
	0.1188	0.0838	13.66				
	Mean	= 0.0848	13.65				
	Std. Dev.	= 0.0009	0.06				



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SC-144DR

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