

Organic Application Note

Sulfur in Plant Tissue

Accessories

529-204 Crucibles, 502-321 COM-CAT™ accelerator (501-636 V₂O₅ can be used but it is more detrimental to the combustion system)

Calibration Standard NIST or other suitable material

Sample Weight ~0.25 g

Analysis Time 90 to 300 seconds

Furnace Temperature 1350°C

Comparator Level Sulfur: 1%

Sample Preparation

Sample should be uniform consistency and dried at 85°C for two hours prior to analysis.

Procedure

1. Prepare instrument as outlined in the operator manual (perform maintenance, leak checks, etc.).
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 ~0.25 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 (g) | % Sulfur | Sample | Weight (g) | % Sulfur |
|-----------------|------------------|----------------|-----------------|------------------|----------------|
| 502-273 Alfalfa | 0.2616 | 0.290 | 502-082 Tobacco | 0.2482 | 0.599 |
| (0.292 ± 0.008) | 0.2534 | 0.291 | (0.60 ± 0.03) | 0.2458 | 0.596 |
| | 0.2488 | 0.290 | | 0.2592 | 0.602 |
| | 0.2543 | 0.292 | | 0.2613 | 0.599 |
| | 0.2508 | 0.289 | | 0.2437 | 0.598 |
| | 0.2489 | 0.294 | | 0.2482 | 0.601 |
| | 0.2459 | 0.298 | | 0.2654 | 0.605 |
| | Average | = 0.292 | | Average | = 0.600 |
| | Std. Dev. | = 0.003 | | Std. Dev. | = 0.003 |



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