ORGANIC MATTER IN SOIL TEST KIT

MODEL ST-OR • CODE 5020

QUANTITY	CONTENTS	CODE
230 mL	*Potassium Dichromate, 1.0N	*5159-K
2x230 mL	*Sulfuric Acid, Concentrated	*5172-K
475 mL	*Ferrous Ammonium Sulfate, 0.4N	*5117-L
50 mL	*Diphenylamine Indicator	*5114-H
90 g	*Sodium Fluoride Powder	*6550-S
1	Spoon, 0.5 g, plastic	0698
1	Spoon, teaspoon, plastic	0461
2	Flasks, Erlenmeyer, 250 mL, w/cap	0433
1	Graduated Cylinder, glass, 10 mL	0416
1	Graduated Cylinder, glass, 100 mL	0419
1	Buret, 25 mL	0428
1	Organic Matter Endpoint Color Standard	5334
1	Pipet, dropping, plastic	0352

***WARNING:** Reagents marked with a * are considered hazardous substances. Material Safety Data Sheets (MSDS) are supplied for these reagents. For your safety read label and accompanying MSDS before using.

To order a complete set of refill reagents, order as R-5020. To order individual reagents or test kit components, use the specified code number.

Read the Automatic Buret Instruction Manual before proceeding.

NOTES

1. The soil should be air dried, crushed and filtered through a 20 mesh screen before testing.
2. The soil sample should be 0.5 g. If possible, the sample should be weighed to avoid error with heavy clay soils or light humus soils.
3. To avoid etching of the glassware by the *Sodium Fluoride Powder (6550), wash and rinse all of the equipment immediately after testing.

(Continued on the next page...)

PROCEDURE

1. Use the spoon (0698) to measure 0.5g of the soil to be tested. Add to one of the 250 mL Erlenmeyer flasks (0433).
2. Use the 10 mL graduated cylinder (0416) to add 10 mL of *Potassium Dichromate, 1.0N (5159).
3. Use the 100 mL graduated cylinder (0419) to add 20 mL of *Sulfuric Acid, Concentrated (5172).

   NOTE: Add the acid very slowly, holding the mouth of the flask away to avoid any spattering when the acid runs into the solution. As a safety measure, protective glasses should be worn during this test. If acid is spilled onto skin or clothing, flush immediately with water and apply baking soda to neutralize any residual acid.
4. Stopper. Swirl the flask gently for one minute. The solution will be very warm. After mixing, cool the flask and contents by holding under cold water.
5. Repeat Steps 2, 3, and 4 using the second flask without a soil sample. This will be a blank which must be run with every soil sample or group of samples.
6. Use the 100 mL graduated cylinder (0419) to carefully add 100 mL of tap water to each flask. Precautions against spattering should again be observed.
7. Use the plastic teaspoon (0461) to add one generous measure of *Sodium Fluoride Powder (6550) to each flask. Stopper and shake until dissolved.
8. Use the pipet (0352) to add 10 drops of *Diphenylamine Indicator (5114) to each flask.
9. Fill the 25 mL buret to the 0 mark with the *Ferrous Ammonium Sulfate, 0.4N (5117). While gently swirling the flask, titrate with *Ferrous Ammonium Sulfate, 0.4N until color changes from dark brown through blue to a deep green. Match color with Organic Matter Endpoint Color Standard (5334). Titrate until colors match. Record value from buret. Repeat with second flask.

   NOTE: The change from blue to the final green is very rapid, so the titrating solution should be added one drop at a time at this point.
10. The result is calculated from the formula:

$$\%\ Organic\ Matter\ = \frac{16(Blank\ Value - Sample\ Value)}{Blank\ Value}$$

LaMOTTE COMPANY

Helping People Solve Analytical Challenges®

PO Box 329 • Chestertown • Maryland • 21620 • USA
800-344-3100 • 410-778-3100 (Outside U.S.A.) • Fax: 410-778-6394
Visit us on the web at www.lamotte.com