

**STATE OF OHIO
DEPARTMENT OF TRANSPORTATION**

**SUPPLEMENT 1016
METHOD OF TEST FOR
LOSS OF IGNITION OF TOP SOIL**

April 19, 2002

1016.01 Scope. This method covers a procedure for determining the percentage of organic material in top soil.

1016.02 Apparatus.

1. A balance sensitive to 0.01 g.
2. A mortar and a rubber covered pestle.
3. A 25 cc capacity porcelain crucible approximately 45 mm (1 13/16 in.) diameter.
4. One 425 μ m (No. 40) sieve conforming to the requirements of ASTM E-11.
5. A muffle furnace capable of maintaining a minimum temperature of 900°C.
6. A drying oven capable of maintaining a temperature of 110 \pm 5°C (230 \pm 9°F).

1016.03 Materials. A saturated solution of ammonium carbonate crystals in distilled or demineralized water.

1016.04 Procedure.

1. Thoroughly mix the top soil sample and oven dry at least 100 g at 110 \pm 5°C (230 \pm 9°F) for a minimum of two hours.
2. Place the dried top soil in the mortar and grind with the rubber covered pestle to break up aggregations of soil particles.
3. Sieve the ground top soil by use of the 425 μ m (No. 40) sieve.
4. Weigh exactly 10.0 grams of the top soil passing the 425 μ m (No. 40) sieve in a pre-weighed porcelain crucible. Place the crucible and top soil in the cool muffle furnace and raise the temperature to 850°C. Heat the sample at 850°C for one hour. Remove and let cool to room temperature.

5. Moisten the sample in the crucible with approximately 5 cc of saturated ammonium carbonate. Dry the top soil sample moistened with ammonium carbonate in an oven at $110 \pm 5^{\circ}\text{C}$ ($230 \pm 9^{\circ}\text{F}$) for 3 hours. Remove, let cool to room temperature and weigh.

1016.05 **Calculations.** Percent loss on ignition = $\frac{10.0 - A}{10.0} \times 100$

A = Corrected final weight.