8. Procedure

8.1 Determine the moisture content of an as-received representative portion of the sample using the xylene extraction Test Method described in D2867. If the as-received sample is wet, drain it of all free liquid before the representative sample is taken.

8.2 Weigh to 0.1 mg accuracy a crucible and cover that have been ignited in a muffle furnace regulated at 950 °C for 30 min and cooled in a desiccator. Record the weight.

8.3 Using a spoon or spatula, dip from the sample bottle approximately 1 g of the as-received sample and place it in the pre-dried and tared crucible. Cover it with a lid and immediately weigh it to the nearest 0.1 mg.

8.4 Place the covered crucible in the muffle furnace regulated at 950 ± 25 °C for 7 min ± 10 s.

8.5 Remove the covered crucible from the muffle furnace and cool to room temperature in a desiccator.

8.6 Weigh the covered crucible to the nearest 0.1 mg. Record the weight.

9. Calculation

9.1 Calculate the weight loss percent as follows:

$$\text{Weight loss, } \% = [(C - D)/(C - B)] \times 100 \quad (1)$$

where:

B = mass of crucible and cover, g,
C = mass of crucible, cover, and sample, g, and
D = mass of crucible, cover, and de-volatilized sample, g.

9.2 Calculate the volatile matter content of the sample as follows:

$$VM, \% = E - F \quad (2)$$

where:

VM = volatile matter content of as-received sample, %,
E = weight loss, % (as defined in 9.1), and
F = moisture, % (as measured in 8.1).

10. Precision and Bias

10.1 An interlaboratory study of this test method was conducted in 1996. Each of seven laboratories tested three randomly drawn specimens from each of three different activated carbons containing volatile matter content. Carbon A was a coconut shell gas phase carbon containing gasoline vapors. Carbon B was a coal-based liquid phase carbon containing organic components from gasoline. Carbon C was a coconut shell vapor phase carbon containing chlorinated organic compounds. The average volatile matter contents were 24.7 %, 9.1 %, and 12.9 %, respectively. In order to determine the volatile matter content of the samples, their moisture contents were determined according to Test Method D2867 and were found to be 3.54 %, 35.2 %, and 3.87 %, respectively. Practice E691 and E691 computer software were used to design the study and analyze the resulting data.

10.2 *95 % Limit on Repeatability (Within Laboratory), %:*

	Activated Carbon		
	A	B	C
Volatile Matter Content, %	1.38	0.63	0.44

10.3 *95 % Limit on Reproducibility (Between Laboratories), %:*

	Activated Carbon		
	A	B	C
Volatile Matter Content, %	1.54	1.32	1.47

NOTE 1—The terms "limit on repeatability" and "limit on reproducibility" are used as specified in Practice E177.

11. Keywords

11.1 activated carbon; volatile matter