Somaiya Vidyavihar University.
K. J. Somaiya College of Engineering, Vidyavihar, Mumbai 400077.

Department of Science and Humanities
Applied Chemistry Laboratory

Subject: Engineering Chemistry

Observation

Weight of empty crucible= _____ gm (W1)

Weight of crucible + Sample (Before heating) = _____ gm (W2)

Weight of sample before drying = _____ gm($W_2 - W_1$)

= _____ gm (W3)

Weight of crucible + sample (after heating) = _____ gm (W4)

Weight of the sample (after heating) = _____ gm (W4- W1)

= _____ gm (W5)

Loss in weight of sample = _____ gm (W5- W3)

= _____ gm (W6)

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	Batch: **Roll No.:** **Name:**

Title : **Determination of Volatile matter in Fuel.**

Aim : To estimate the percentage volatile matter in sample fuel.

Theory : Volatile matter is an undesirable component of mined coal. It is bought and transported at the cost of fuel. It does not contribute to calorific value but actually reduces it. Volatile matter causes elongation of flame and sooty flame which further adds to the cost of the process.

Requirement : Silica crucible, finely ground charcoal powder, desiccator, Balance , fractional weight box.

Procedure : To determine the volatile matter, air dried coal is crushed (which can pass through mesh No.60 (ASTM). Initially weigh empty crucible along with lid. Note down the weight. Then weigh about 1gm of sample in a crucible. Note down the weight of coal taken. Keep this crucible in an oven maintained at a temperature between 920± 20^0C with half lid open. After seven minute the crucible with closed lid is transferred to a desiccator for cooling. After cooling the crucible is weighed again. Note down the weight.

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Calculation:

Weight of sample taken = _____ gm (W3)

Loss in weight = _____ gm (W6)

$$\% \text{ Volatile matter} = \frac{\text{Loss in weight}}{\text{Wt of sample taken}} \times 100$$

$$= \frac{W6}{W3} \times 100 - \%\text{Moisture}$$

= _____%

Result : Percentage of volatile matter in given charcoal powder = _____