

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:	

<u>Title</u>: Determination of Volatile matter in Fuel.

<u>Aim</u>: 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,

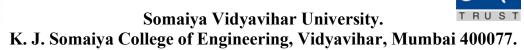
desiccator, Balance, fractional weight box.

Procedure : To determine the

: 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°C 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	e taken = gm (V	V3)	
Loss in weight	= gm (W	(6)	
	% Volatile matter	= <u>Loss in weight</u> Wt of sample taker	 '
		$= \frac{\text{W6} \times 100-\%}{\text{W3}}$	Moisture
		=	%
<u>Result</u>	: Percentage of volatile	natter in given charc	oal powder