

Experiment A

Orifice and Free Jet Flow

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3 November, 2022

1 Introduction

The main purpose of this experiment is to investigate the Bernoulli equation for orifice and free jet flow. This experiment is divided into two parts, the first part is to determine the coefficient of velocity from the jet trajectory. And the second part is to determine the coefficient of discharge under the constant head.

2 Theory

3 Results and Discussion

You should present all relevant information in this section objectively. There is no need to include calculations, that can be shown in appendix, (for instance as such: see appendix ??), but be sure that all measurements and end results are in the report. As a tool to make things easier to read, you could use tables as in Table ??[?]. You can refer to the appendix where you have done your calculations to back up that your end results are correct, and to keep the flow structure clean. In Table ?? all columns are centered. This is shown by the ccc tag inside the curly braces. You can also use lll, rrr, to create left aligned columns or right aligned columns respectively, or any combination of the three. The caption in tables should ALWAYS be on top of the actual table.

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Table 1: The tables presents the standard enthalpy of formation and the standard entropy used to calculate the thermodynamics of the combustion of carbon.

	$\Delta_f H^\circ$ [kJ mol ⁻¹]	S° [J K ⁻¹ mol ⁻¹]
C	140	201
O ₂	103	104
CO ₂	430	210

All your results should be presented by now, and all that remains is that you discuss them. You should always be critical of your results, and if they are not in correspondence with your theory presented in section ?? this should be elaborated on! Why is there a mismatch between those two? What could have gone wrong and what do these non-correspondences imply? If there are undiscussed results, do not neglect them! It is easily seen and it doesn't look good in the report. Good reports really stand out from bad ones in this section and you can shine through if you have a well thought through reflection here.

4 Conclusion

The conclusion should, as the abstract, wrap up what you have found in the experiment. It should state what you have done and what you have found. The conclusion should only state what is obvious from the discussion in section ??; no new information should arise here. The conclusion is the first place the reader will go looking if he wants to get an overview of the report. If it is interesting, he might read the rest. Be sure that the conclusion is short and concise, but do not omit important information. You have one shot at presenting your results: if you have done excellent work at the lab it doesn't matter if you are unable to present the results in an appealing way. The report is your only way of communicating and presenting your hard work.

List of Symbols

Symbol	Unit	Explanation
n	mol	Amount of substance
m	kg	Mass
H	kJ mol^{-1}	Molar enthalpy
S	$\text{J K}^{-1} \text{mol}^{-1}$	Molar entropy
G	kJ mol^{-1}	Gibbs free energy
A	kJ mol^{-1}	Helmholtz free energy