Goal

- Perform simulations to demonstrate the gas laws discovered by Boyle and Charles.

Objectives

- Performance simulation to demonstrate the effect of the volume on the pressure of propane and butane gases held at constant temperature.
- Perform a simulation to demonstrate the effect of temperature on the volume of methane and butane gases at constant pressure.

Introduction

Start with an introductory sentence about gases. Next, state the goal or objectives of the experiment. Present equations for Boyle’s Law and Charles’ law.

Procedure

Refer to pages on the simulation web site where the procedure is found, end the sentence with a reference number, and include a reference for the web site in the References section. Briefly summarize the general method.

In a separate paragraph at the end of this section, note all safety issues related to the experiment, what measures should be taken to work safely with flammable, compressed gases, and how chemicals were disposed of when finished.

Results

Begin this section by stating where the data and results are tabulated. State where all original data were recorded - refer to an appendix with your notes. Present tables with the data collected during the experiment. Present two plots, where each plot contains both sets of data for a given type of experiment.

Discussion

Discuss how the results demonstrate the gas laws. Comment on your overall assessment of the reliability of the instruments, procedures, and results in the simulation, naming specific sources of confusion or uncertainty in the result. Mention any safety issues that did not seem properly addressed and the impact these could have on the student or on the results in a real laboratory.

Conclusion

Very briefly summarize the main goal and final results, and comment on the broader significance of understanding the behavior of gases.

References

1. Give a reference for the lab manual.
2. Include additional references as needed.