

Study Guide - Gas Laws

Objectives: Upon completion of the following activities, you should be able to:

1. Describe expansion/compressibility, density, fluidity, and diffusion of gases.
2. Convert units of pressure
3. Convert units of Volume
4. Convert units of Temperature
5. State the standard conditions of temperature and pressure (STP).
6. Use Boyle's law to calculate volume-pressure changes at constant temperature.
7. Use Charles's law to calculate temperature-volume changes at constant pressure.
8. Use Gay-Lussac's law to calculate pressure-temperature changes at constant volume.
9. Use the combined gas law to calculate volume-temperature-pressure changes.
10. Be able to use the Ideal Gas Law to find molar mass (hint: see Labs)
11. Be able to calculate problems involving gas stoichiometry
12. Know concepts & terms relating to phases and phases changes (along with temperature and heat).

Outline of Notes:

Characteristics of Gases

CHARACTERISTIC	DESCRIPTION

For the following terms, define and state units (list all unit conversions)

Pressure

Temperature

Volume

GAS LAWS - State Formula and write an example problem.

Boyle's Law

Charles's Law

Gay-Lussac's Law

Combined Gas Law

Avogadro's Law

The Ideal Gas Law

Gas Stoichiometry

- How can you calculate moles of gas? (List two ways). Write an example problem.

Temperature & Heat questions

1. What is the difference between temperature & heat?
2. Describe molecular motion of solids, liquids, and gases?
3. How do solids, liquids, and gases differ?
4. What is the difference between a direct and indirect (inverse) relationship between two variables?
5. List some vocabulary that relates to phase changes (e.g. solid to liquid, liquid to gas, etc.)