

Background: With molecules behind us we can finally get to gasses, the pinnacle of excitement in any chemistry class! It's a gas gas gas! This was clearly the favored state of matter of the Rolling Stones.

Gasses are interesting from a physical perspective. They are largely invisible to our eyes, yet it is impossible to ignore various pressure and temperature changes (also known as weather). Gasses are also the most easily modeled state of matter because individual particles can be considered mutually exclusive.

There are several types of relationships that describe the nature of a gas. Boyles law describes the pressure and volume relationship between gasses. Charles Law describes the relationship between temperature and volume. Avogadro's Law describes the relationship between pressure and volume of a gas. (No one in Chicago ever got my SCUBA analogies. I think you guys will do well there.) Finally the Gay-Lussac law describes the relationship between pressure and temperature.

Finally, we will summarize all of those laws into one universal gas law, known as the Ideal Gas Law. ($PV=nRT$). It will be the last formula you learn in this class, and it will be your best friend for the next couple of weeks.

Objectives:

1. Convert between simple units of pressure.
2. Perform calculations using Boyles, Charles, Avogadros, and the Gay-Lussac Law.
3. Plot the relationships between various gas quantities.
4. Describe Dalton's Law of Partial Pressure.

Reading: Zumdahl Chapter 13