

Participation Assignment

CHEM 1090-General Chemistry I

Name:

#18

Section: 32, TR

Due Date: Thursday 12/6/2018

1. Write the Lewis structure and the names for the electronic structure (the book calls this the “electron-domain geometry”) and for the molecular structure (“molecular geometry”) for each of the following:

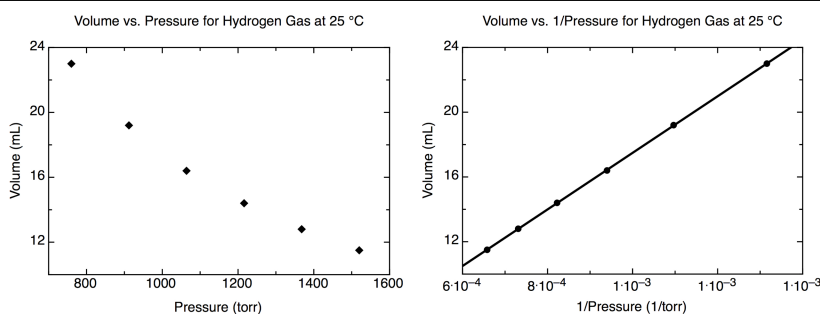


Kinetic Molecular Theory

- A gas consists of tiny particles, either atoms or molecules, moving about at random.
- The volume of the particles themselves is negligible compared with the total volume of the gas.
- The gas particles act independently of one another; there are no attractive or repulsive forces between particles.
- Collisions of the gas particles, either with other particles or with the walls of the container, are elastic (constant temperature).
- The average kinetic energy of the gas particles is proportional to the absolute (kelvin) temperature of the sample.

Gas Laws

Boyle's Law



$$V \propto \frac{1}{P}$$

Constant: n (moles)
T (temperature)

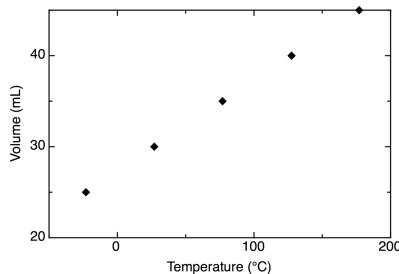
Example:

$$PV = k$$

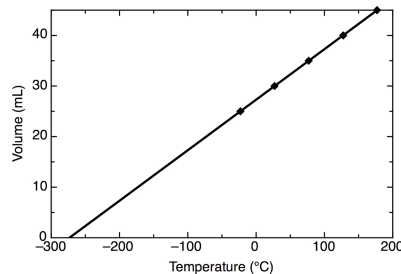
Gas Laws

Charles's Law

Volume vs. Temperature for Hydrogen Gas at Constant Pressure



Volume vs. Temperature for Hydrogen Gas at Constant Pressure



$$V \propto T$$

Constant: n (moles)
P (pressure)

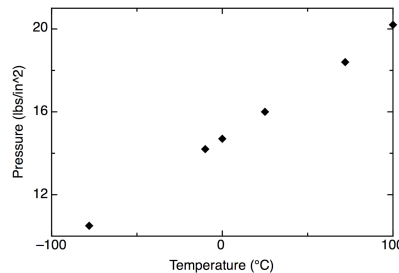
Example:

$$\frac{V}{T} = k$$

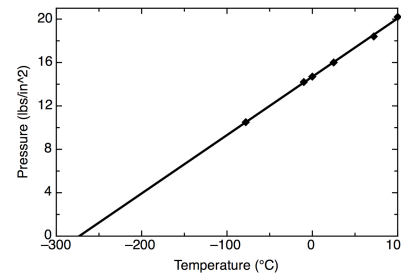
Gas Laws

Pressure-Temperature Law

Pressure vs. Temperature for Air at Constant Volume



Pressure vs. Temperature for Air at Constant Volume



$$P \propto T$$

Constant: n (moles)
V (volume)

Example:

$$\frac{P}{T} = k$$