

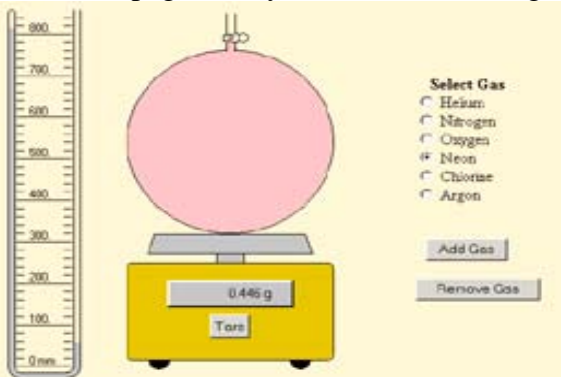
Chem 534
Avogadro's Law: Simulation

Name: _____

Purpose: to examine whether density in g/L and molar concentration of a gas in moles/L vary at a fixed pressure and temperature.

Procedure:

1. Go to <http://www.chm.davidson.edu/ChemistryApplets/GasLaws/AvogadrosLaw.html>
2. Scroll down to the bottom of the page until you see the following:



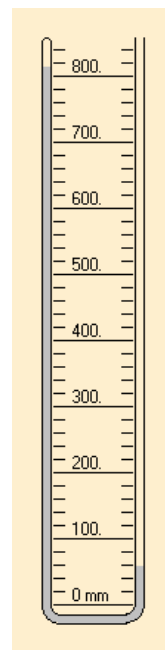
3. Choose a gas.
4. Press "tare" and begin to add gas until you get to a standard pressure of 580 mm. This is how you do it:

Your manometer should look like the diagram on your right. The pressure reading is obtained by *subtracting the right column from the left column*:

For example: 723 mm – 143 mm = 580 mm. If your difference is higher than 580, remove gas. Otherwise, if the difference is lower than 580, you need to add gas.

5. Record the mass next to the right gas in the data table.
6. Repeat steps 3 to 5 for the remaining gases.

Data:



Gas	Mass Needed to Create 580 mm Pressure
Helium, He	
Nitrogen, N ₂	
Oxygen, O ₂	
Neon, Ne	
Chlorine, Cl ₂	
Argon	

Analysis:

1. Recopy the data into the first column and fill out the last two columns by carrying out the appropriate calculations..

Gas	Mass Needed to Create 580 mm Pressure	g/L (remember the volume of the flask was 500 mL)	moles/L
Helium, He			
Nitrogen, N ₂			
Oxygen, O ₂			
Neon, Ne			
Chlorine, Cl ₂			
Argon, Ar			

2.
 - a. What do you notice about the values in the last column?
 - b. Why is this not surprising?

Conclusion: