

The pressure gauge in the apparatus for this experiment is measured in pounds/square inch p.s.i. The conversions are: $1 \text{ atm} = 14.7 \text{ p.s.i.} = 101.3 \text{ kPa}$

Purpose:

Hypothesis:

Observations:

total volume of gas = volume of gas in syringe + volume of gas in the line.
(see table) (3.8 mL)

$V_{\text{(gas in syringe in mL)}}$	$V_{\text{(Total)}}$	trial 1 P	trial 2 P	$P_{\text{(average)}}$	$P_{\text{(avg)}} V_{\text{(T)}}$
30					
25					
20					
15					
10					

Discussion:

1. Plot a graph of the average pressure exerted versus the total volume. The volume is the independant variable and should therefore be plotted on the x-axis.
2. Compare the shape of your graph with the sample plots. Determine the relationship between the pressure and the volume.
3. Determine two new values of P and V from your graph. Substitute these into the equation given for your graph and calculate the constant, k.
4. What can be said about the PV calculations and the constant?
5. Make a concluding statement about the general relationship between the pressure and the volume of a gas.