

### THEORY

1. The first part of the experiment is to determine the value of the universal gas constant R. This is done by measuring the volume of a gas at different temperatures and pressures. The ideal gas law is used to calculate R from these measurements.

2. The second part of the experiment is to determine the molar mass of a gas. This is done by measuring the mass of a gas and its volume at a known temperature and pressure. The ideal gas law is used to calculate the molar mass from these measurements.

Temperature (K)	Volume (L)	Pressure (atm)	Mass (g)
273	0.100	1.00	0.00136
273	0.200	1.00	0.00272
273	0.300	1.00	0.00408
273	0.400	1.00	0.00544
273	0.500	1.00	0.00680
273	0.600	1.00	0.00816
273	0.700	1.00	0.00952
273	0.800	1.00	0.01088
273	0.900	1.00	0.01224
273	1.000	1.00	0.01360

### EXPERIMENT

