9.10.1: Lecture Demonstration

Determining the Molar Mass of Gases in Aerosol Cans

An aerosol can[1] is weighed.

A small diameter (aquarium aerator tubing) tube (or any other convenient tubing) is attached to the aerosol can.

Gas (100-200 mL) is discharged into an inverted, water-filled 500 mL graduated cylinder in a pneumatic trough, so that the volume of gas can be measured.

The aerosol can is reweighed.

The atmospheric pressure is determined (barometer or weather service).

The amount of gas is calculated by means of the ideal gas law.

The molar mass is determined, M = m(g) / n(mol).

References

1. we use butane cans (for refilling lighters), freon "Dust Off" (for cleaning electronics), or other small 'aerosol' cans.