

Mr. MacGillivray
General Chemistry
Pre-Lab Assignment: Determining the Molar Mass of Butane

1. What is the name of the gas that is used in cigarette lighters?
2. What is its chemical formula?
3. What is the molar mass of this gas? (Use periodic table.)
4. What is the % composition by mass of air? Round to the nearest 0.1 %. Look it up in your textbook or online.
5. What is the average molar mass of air?
6. What is the density of air in g/L? Remember: $D = \frac{m}{V}$. It will be easier if you assume that you have one mole of air.
7. What is the density of the gas from #2? Remember: $D = \frac{m}{V}$. It will be easier if you assume that you have one mole of this gas.
8. Will the gas from #2 float or sink in air? Why?
9. Design an experiment to determine the molar mass of butane using a cigarette lighter, a flask, an electronic balance, and a tub of water.