Name
Date   **Period**

Lab 24
DETERMINING GRAM ATOMIC MASS

PRELAB QUESTIONS
1. Define atomic mass, atomic mass unit, gram atomic mass**,** and mole

2. Draw a mole diagram and use the diagram to show how you would determine: A given mass, gram atomic mass, and the number of moles. (One equation can be rearranged to answer all these questions.)

NAME _____   PERIOD_____

DATE _____   LAB PARTNERS

EXPERIMENT 24
DETERMINING GRAM ATOMIC MASS

OBSERVATIONS AND DATA

      (A) Mass of crucible + cover   g

      (B) Mass of crucible + cover + Ag_2O g

      (C) Mass of crucible + cover + Ag   g

      (D) Mass after reheating   g

CALCULATIONS

1. Find the mass of the Ag: (C) - (A)   g

2. Find the mass of the O: (B) – (C)   g

3. Find the number of moles of oxygen atoms:

$$\text{Moles of O} \quad \frac{\text{Mass of 0 in g}}{16.0 \text{ g/mole 0}} \qquad \text{moles O}$$

4. Find the number of moles of silver atoms:

$$\text{Moles of Ag atoms} = \frac{2 \text{ moles Ag}}{1 \text{ mole 0}} \quad \text{X} \quad \# \qquad \text{moles Ag}$$

5. Find the gram atomic mass of silver

$$\text{Gram atomic mass} \quad \frac{\text{Mass of Ag in grams}}{\# \text{ Moles of Ag}}$$

CONCLUSIONS AND QUESTIONS
1. Write a balanced equation for the decomposition of Ag_2O by heating.

2. What are the most likely sources of error in this experiment?

Make use of a table of atomic masses in answering questions 3 through 5.

3. To the nearest whole number, how many moles are in a
    120-gram sample of calcium metal? How many atoms is this?

4. What is the gram atomic mass of sodium? What is the mass of 4.5 moles of this element?

5. What is the gram atomic mass of oxygen (0)? What is the mass of one mole of oxygen gas
    (O_2)? Explain the difference.

6. Based on the atomic mass of Ag (107.5g), calculate your % Error.

Discussion

Conclusion