

Name

Date

Period

Grade:

Lab 29

RELATING MOLES TO COEFFICIENTS OF A CHEMICAL EQUATION

PRELAB QUESTIONS

1. Define coefficient, subscript, molar volume, precipitate.
2. What does the term “excess” mean in a chemical equation?
3. What law have you previously studied in chemistry defines the relationship between reactant and products in a balanced equation?

NAME _____
DATE _____ LAB PARTNERS _____

PERIOD _____

EXPERIMENT 29 RELATING MOLES TO COEFFICIENTS OF A CHEMICAL EQUATION

DATA TABLE

A.	Mass of empty beaker	g
B.	Mass of iron filings	g
C.	Mass of beaker & copper	g
D.	Visual observations	g

CALCULATIONS Use the following as applicable.

$$\text{Number of Moles} = \frac{\text{Mass (g)}}{\text{Gram atomic mass}}$$

Gram atomic mass of Fe = 55.8 g Fe/mole

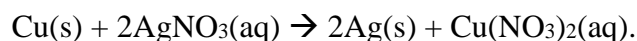
Gram atomic mass of Cu = 63.5 g Cu/mole

Show all calculations

1. Find the mass of Cu produced (c-a) g
2. Find number of moles of Cu produced
3. Find number of moles of Fe produced
4. Find the whole number ratio of moles of Fe to moles of Cu

CONCLUSIONS AND QUESTIONS

1. How does the ratio found in calculation 4 above compare with the ratio of the coefficients of the same two metals in the balanced equation for the reaction?
2. How many moles of copper sulfate are used to produce the solution in this experiment? Why is this amount of copper sulfate said to be “in excess?”
3. Explain why the iron is the limiting factor in this experiment.
4. A general description of the single replacement reaction in this experiment is:
metal + salt in solution \rightarrow “new” metal + “new” salt solution.
Give a balanced equation for another example of this type of single replacement reaction.
5. Give general descriptions of two other types of single replacement reactions. Using balanced equations, give a specific example of each type.
6. Consider the reaction:



If 3 moles of copper metal react, how many moles of silver metal will be produced? **Show all work.**

Discussion

Conclusion