

Name: _____

Section: _____

Data and Calculations for Experiment 5

Be sure to record all masses to 0.001g and include the units on all numerical values!

Mass of CuSO_4 /sand mixture _____

Mass of empty evaporating dish _____

AFTER separation and drying both solids:

Mass of evaporating dish and dry CuSO_4 _____

Mass of dry CuSO_4 _____

Mass of dry sand _____

CALCULATIONS:

Total mass of recovered sand and CuSO_4 _____

Calculated total percent recovery _____

Show Calculation

Percent by mass of CuSO_4 :

Show Calculation _____

Percent by mass of sand:

Show Calculation _____

Questions

1. Many students do NOT recover 100% of the original mixture. Describe at least TWO possible problems that could cause LESS than 100% recovery of the mixture.

2. A student obtained the following data:

Mass of beaker	25.87 g
Mass of beaker with mixture sample	28.12 g
Mass of evaporating dish	146.36 g
Mass of evaporating dish with dried salt	147.10 g
Mass of beaker with dried sand	???

However, this student spills her sand sample out of the beaker before weighing it. If the student believes in the Law of Conservation of Mass, what should have been the weight of the beaker with the dried sand in it? Show all your work.

3. A student receives a sample of a mixture with three components: (1) solid iodine that is first removed from the mixture by evaporation, (2) solid salt that is dissolved to separate it from the third component, and (3) solid sand. The salt and sand are dried and weighed, but the iodine escapes as a gas and is not recovered. The student starts with 4.25 g of the mixture and recovers 1.16 g of salt and 2.40 g of sand. What is the mass percent of each component in the original mixture? Show all your work.