

Micro Mixture Separation Lab

You will receive a mixture containing salt, sand, iron filings, stearic acid and sawdust. You are to design an experimental procedure that will separate the mixture and recover all five components in their natural states (all solids). In addition, you will also be required to recover a specific mass of one component. Each sample has exactly 5.00 g of sand. Your group will recover as much of the sand as possible and solve for your percent recovery:

$$\frac{\text{recovered mass}}{5.00 \text{ g}} \times 100\%$$

The tube that contains your mixture must be returned empty and clean. During the course of the lab, you will be allowed only (2) containers to store wet sample overnight. Your group is responsible for the storage of the rest of the mixture until the lab is turned in. The components of the mixture should be retained in small "plastic-wrap baggies", securely taped closed. If there are any questions regarding the safety of your procedure or if you need specific equipment, ask your instructor first. Your group will need to make a poster (exactly 14" x 22") that describes your final flow chart. Your group will need to tape your separated compounds in the "plastic-wrap baggies" to the appropriate area of the flow chart. The flow chart must also include the full name of each group member and the class period on the **front** of the chart. This flow chart represents 33 of the 40 points for this assignment: 4 points for cooperation/working harmoniously, 3 points for neatness/quality, 3 points for dryness of each component (15 points total); 2 points for purity of samples (10 points total), 4 points for % recovery of sand, and 7 points for neatness of poster & answers to questions.

Your group must also turn in one write-up (1 for the group, not 1 per person). In addition each group must turn in the draft of flow chart and the final flow chart as approved (stamped). All group members' names and period should be on the front of the flow chart. The flow chart should list the equipment needed.

Results are to be reported on the front of the poster in the lower right hand corner. They maybe neatly handwritten to typed and glued on. Show the percent recovery with calculations. In addition, answer the following questions:

1. What are the sources of error in your separation and recovery techniques?
2. How might you have proceeded differently to limit the errors discussed in question 1?
3. Discuss the five distinct physical properties you used to separate the components in your mixture.

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