

Experiment 5
Part 2 – Separation of a Mixture
Revised Directions

6. Using a spatula, pick up some salt and transfer it to a test tube. Add some water to the tube to fill it about 1/3 of the way. Shake the tube side-to-side to mix it. Does the salt dissolve in the water?
7. Repeat step 6 in a different test tube, using charcoal instead of salt. Does the charcoal dissolve in the water?
8. Get a piece of weighing paper, weigh it on a digital balance, and record the mass. Put 2 or 3 spatula tipfuls of (dry) salt on the paper. Weigh the paper with the salt, and record the reading. Then put about the same amount of charcoal (2-3 spatula tipfuls) on the paper, and weigh it again. Mix the salt and charcoal together with the spatula.
9. Get an empty 100-mL or 150-mL beaker and transfer the salt/charcoal mixture to the beaker.
10. Put about 50 mL of deionized water in the beaker and stir the contents with a stirring rod for a while. Describe what happens.
11. Get your evaporating dish from your lab locker. Make an identifying mark on it (so you can tell it apart from other students' evaporating dishes), and weigh it on one of the digital balances.
12. Weigh a piece of filter paper, and then filter the mixture from step 10 using a funnel lined with your filter paper. Your laboratory instructor will demonstrate this procedure. Collect the filtrate (the liquid that passes through the filter paper) in your weighed evaporating dish. When the filtration is complete, rinse out the beaker with water from a wash bottle, and add the rinsings to the funnel.
13. When all of the liquid has drained through to the evaporating dish, heat the evaporating dish on a hot plate to evaporate the water.
14. Set the filter paper aside to dry or put it in the drying oven (ask your instructor which method he/she prefers). When the filter paper is completely dry, cool it and weigh it and its contents. Subtract to get the mass of just the contents of the filter paper.
15. When all of the water has evaporated from the evaporating dish (and when the residue looks dry), cool it and weigh it. Subtract to calculate the mass of salt recovered.
16. Calculate the percentage recovery of charcoal after the separation process.
17. Calculate the percentage recovery of the salt after the separation process.

$$\% \text{ Recovery} = \frac{\text{mass recovered}}{\text{original mass}} \times 100$$