Separation of a Mixture Report

Procedure

For this experiment, it is necessary to weigh out 8.0 grams of the unknown mixture. Using a magnet, separate the magnetic power from the mixture by covering a strong magnet with filter paper and repeatedly move it over the mixture. This may have to be done a few times to ensure that all of the magnetic powder is removed from the mixture. Then, use forceps to remove lead shot from the salt and sand mixture. Next, mix water into the sand and sodium chloride mixture and stir so that the sodium chloride will be dissolved in the water. Filter the mixture slowly though filter paper, then put both the filter paper (containing the sand) and the 50 mL beaker (containing the water and sodium chloride mixture) into the over to evaporate the water from both substances. Obtain the masses of each individual substance that you have separated and determine if the sum of each of these masses are equal to the initial mass of 8.0 grams.

Data and Results

Components	Mass of initial Sample	Mass of each separated component	Percent composition	Percent recovery	Percent error
Magnetic Powder		1.355 g	9.694%		
Lead shot		5.608 g	40.123%		
Salt		6.367 g	45.533%		
Sand		0.647 g	4.629%		
Entire Mixture	8 g	13.977 g		174.712%	74.712%

Discussion

When looking at the final data it was discovered that there was 5.977 more grams than what the experiment was started with. Keeping this in mind, when the water was evaporated from the sodium chloride it changed its form to a solid. Since the salt is now more solidified, it is denser than it was to begin with. This could be why the mass changed so drastically. The magnetic powder also had some sand and sodium chloride mixed in with it, which throws off the mass because it isn't purely magnetic powder. If this experiment were repeated, I would give the salt more time to dry completely and recheck my masses multiple times to make sure I am getting the right reading. Also, I would ensure that each separated component doesn't have anything mixed in with it, and I would do this by repeating the magnet step and use water to dilute the sand one more time. To combat the solidified salt, I would try to break it up before recording the mass on it.