FLINN SCIENTIFIC

Name_____

Separating a Mixture by Filtration

Data Table

Iron oxide–Salicylic acid mixture (Observations)		
	Trial 1	**Trial 2**
Mass of Erlenmeyer flask		
Mass of Erlenmeyer flask and iron oxide–salicylic acid mixture		
Mass of filter paper (step 7)		
Mass of filter paper and iron oxide (step 17)		
Mass of filter paper (step 13)		
Mass of filter paper and salicylic acid (step 17)		

Post-Lab Questions *(Use a separate sheet of paper to answer the following questions.)*

1. For each trial, calculate (a) the original mass of the iron oxide–salicylic acid mixture, (b) the mass of recovered iron oxide, (c) the mass of recovered salicylic acid, and (d) the total mass of recovered solids.
2. Calculate the percent recovery of the iron oxide–salicylic acid mixture for each trial.

$$\text{Percent recovery} = \frac{\text{Total mass of recovered solids}}{\text{Original mass of iron oxide–salicylic acid mixture}} \times 100\%$$

3. For each trial, divide the mass of recovered iron oxide by the total mass of recovered solids and multiply the result by 100. This is the *mass percent of iron oxide* in the mixture.
4. In a similar manner, calculate the *mass percent of salicylic acid* in the mixture.
5. Label each of the following as a *physical or a chemical change*. (a) Salicylic acid dissolves in the sodium hydroxide solution. (b) The mixture is filtered to separate the iron oxide. (c) The filtrate is acidified to precipitate the salicylic acid.
6. Salicylic acid may be crystallized from hot water by dissolving the solid in a minimum amount of boiling water and then cooling the mixture to room temperature. Is this a physical or a chemical change?