

Name \_\_\_\_\_

**Attach the GC/MS chromatograms and hit list to this report.**

Name \_\_\_\_\_

## Nitration of Aromatic Compounds using Ytterbium Triflate: A Green Chemistry Experiment

1. Calculate the percentage yield of nitro aromatic compounds from the weight of your product obtained after rotary evaporation.
2. How much of the catalyst did you receive back after evaporation of the water? \_\_\_\_\_  
Turn the recovered catalyst into me, unless I told you to discard it.
3. Identify the compounds formed in the aromatic nitration of your substrate from the GC/MS results. For each compound provide a name and indicate the retention time.
4. Compute the percentages of each of the product(s) that you identified in the mixture using the individual areas of each peak.
5. If you find starting material in your sample, calculate the percentage of the starting material in the sample from its area.
6. On a separate piece of paper, draw a mechanism for the formation of the product(s) obtained in the reaction, starting from the reaction of the substrate with the nitronium ion. Be sure to draw the appropriate resonance structures in your mechanism. You may need help on this mechanism.