

# [Lab: preparation of esters essay](https://assignbuster.com/lab-preparation-of-esters-essay/)

Preparation of Esters Introduction Esters are known for their pleasant smells such as perfumes and artificial flavorings in contained labs. They are formed when a carboxylic acid reacts with alcohol and a strong acid such as a catalyst called sulfuric acid (HOSTS) for this lab. The structural formula for esters can be represented as R-COO-R’. The R and R’ symbolizes different alkyl groups that can be combined to the ester.

When naming an ester the first part comes from the alcohol followed by the name of the carboxylic acid.

Synthesizing for a complete reaction involves a strong acid which makes the esters a final product. Purpose The purpose of this lab Is to complete four different synthesizing reactions and to Identify Its odors. Than followed by writing chemical equations for each reaction and ester formed. Hypothesis For test tube A I hypothesized that the final ester would be 2-methodology format.

For test tube B I hypothesized the final ester would be octal acetate. For test tube C I hypothesized it would be methyl salicylic.

For test tube D I hypothesized it would be isopleths acetate. Materials and Methods Apparatus 4 test tubes Test tube rack Graduated cylinder (10 ml) 150 ml beaker 250 ml beakers (2) Hot plate Thermometer Safety glasses Beaker tongs Test tube holder Methanol Methyl-2-proposal I-pentagon 1 -octagon Acetic acid Formic acid (methanol acid) Salicylic acid Concentrated sulfuric acid (HOSTS) Procedure 1. We labeled the four test tubes A to D and placed them in the test tube rack.

. Into the appropriate test tubes, we poured the correct amount of an alcohol and added a carboxylic acid as indicated in the table below. We measured the salicylic acid on the balance. We also added four drops of concentrated sulfuric acid to each test tube. Rest tube Alcohol Carboxylic acid 1 ml methyl-2-proposal ml formic acid 1 ml I-octagon 1 ml acetic acid 1 ml methanol 1 g salicylic acid 1 ml I-pentagon 3. We put approximately 120 ml of tap water in a 250 ml beaker.

We than placed the test tubes into the water and heated the water on a hot plate to a temperature of ICC. We left the test tubes in the hot water bath for 15 minutes. 4. We cooled the test tubes by immersing them in a cold water bath. 5. We collected approximately 25 ml of distilled water and added 5 MI of distilled water to each of the test tubes.

6. We carefully noted the odor of the contents of each of the test tubes in our report. . We disposed of all the materials by rinsing them down the sink with copious amounts of Neater.

Octal acetate is the ester responsible for the odor orange.

Methyl salicylic is the ester responsible for the odor oil of wintergreen. I-phenyl acetate is the ester responsible for the odor banana. Therefore, they were all esters that produced good smelling organic chemicals. They all produced water at the end and the catalyst sulfuric acid completed the reactions. My hypothesis was also correct but one of the odors raspberry) was hard to distinguish so next time we have to take more precaution Nile doing our lab.