

Practical 2 – Chapter 10

Organic analysis

You are required to distinguish between the following classes of compounds:

- alcohol
- carboxylic acid
- ketone
- aldehyde.

Carry out all the reactions on all the compounds.

Safety

- The substances you are testing are flammable. Extreme care must be exercised when heating them.
- Extreme care must be exercised when handling concentrated sulfuric acid (corrosive), ethanoic acid, potassium dichromate solution and 2,4-dinitrophenyl hydrazine. All skin contact must be avoided.
- Wear eye protection.

What to do

- 1 Heat each substance with potassium dichromate(VI) solution acidified with dilute sulfuric acid (**Care!**). To heat them safely you should place the boiling tube in a beaker of hot water on a hot plate.
- 2 Add several drops of the test substance to 1 cm³ of 2,4-dinitrophenylhydrazine solution (Brady's reagent) (**Care!**).
- 3 Add magnesium ribbon to a small amount of each liquid.
- 4 Add 1 cm³ of the test substance to ethanoic acid previously acidified with a few drops of concentrated sulfuric acid (**Care!**). Heat the mixture carefully in a water bath. Pour the final solution into a beaker containing sodium carbonate solution. Smell the final mixture carefully.