

NEATH PORT TALBOT COLLEGE
COLEG CASTELL NEDD PORT TALBOT

School of Maths & Science
Science Practical

Preparation of Propanone

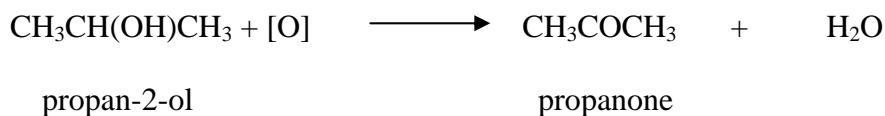
◆ Aim

By the end of this experiment you should be able to;

- (1) Prepare a solution of propanone from propan-2-ol.
- (2) Carry out chemical tests on the product to identify it.
- (3) Record the mass of your product and calculate the theoretical and percentage yields

◆ Introduction

Propanone is prepared by the oxidation of propan-2-ol with a mixture of sodium dichromate (VI) and dilute sulfuric acid.



◆ Safety

Control Measures

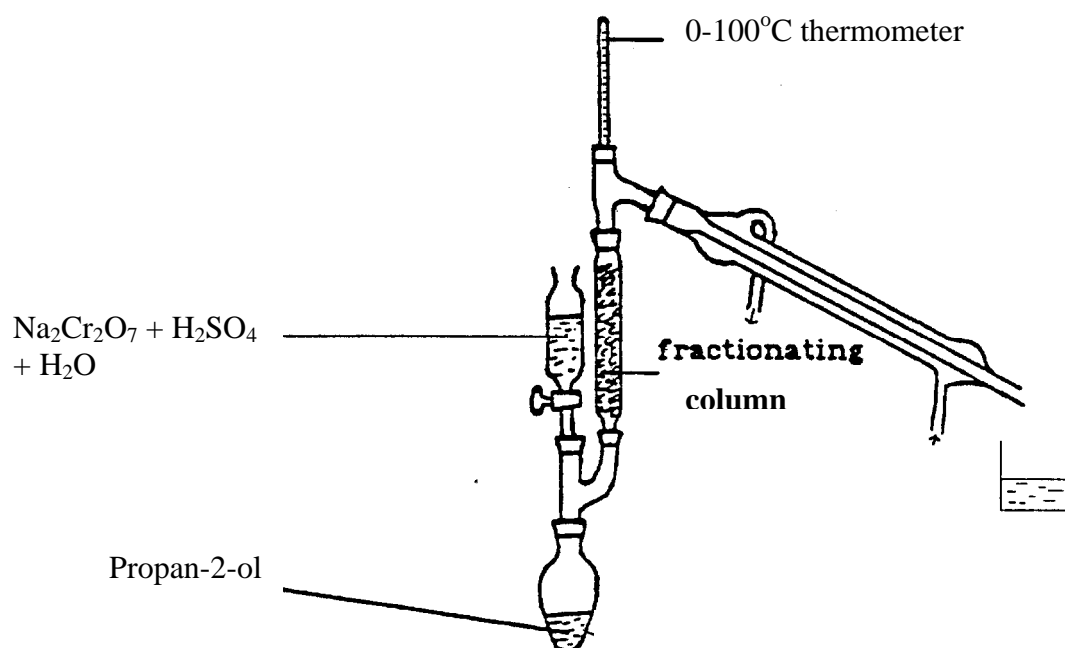
- The wearing of **safety goggles, gloves and a laboratory coat** at all times will be sufficient to take account of most hazards and significant risks.
- Keep stoppers on bottles as much as is possible.
- All waste is to be placed in the labelled container immediately after use.
- You are reminded of the need of good laboratory practise in order to maintain a safe working environment.

Hazards

Oxidising, Toxic	Sodium Dichromate, Conc Sulfuric acid
Corrosive	Conc. Sulfuric acid
Irritant & Flammable	Propanone, Propan-2-ol



◆ Procedure



1. Put 5cm³ (3.9g) of propan-2-ol into the 50 cm³ pear shaped flask and assemble the rest of the apparatus.
2. Using a 100 cm³ beaker, dissolve 7g of sodium dichromate (VI) in 7cm³ of water and carefully add 5cm³ of concentrated sulfuric acid. Cool, then transfer the mixture to the dropping funnel.
3. Add it gradually to the flask to maintain a steady rate of reaction.
4. When the addition of the oxidising agent is complete, slowly raise the temperature using a semi-micro burner, collecting the distillate in the range 54-58 °C. A fractionating column returns any un-reacted propan-2-ol (b.p. 82 °C) to the flask, however if it is not possible to use this piece of equipment then take care not to exceed 75°C as a second vapour of propan-2-ol will start to rise and condense into your product mixture.

5. Record the appearance, the volume and the mass of your distillate. Test the distillate with 2,4-DNP and record your observations.

Volume _____ Mass; _____

Observation;

6. Calculate the theoretical and percentage yields based on the amount of alcohol used.