

OCR (A) Chemistry A-level

Topic 4.2.3- Organic synthesis practical skills

Flashcards

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Describe how a Quickfit apparatus is connected



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Grease the joints using some petroleum jelly on the inside of the joints before connecting the pieces together.



In a distillation setup, why is it necessary to have a continuous water flow around the condenser?



In a distillation setup, why is it necessary to have a continuous water flow around the condenser?

So that the water remains cool in order for the mixture to be distilled



Describe a method that can be used to separate immiscible liquids



Describe a method that can be used to separate immiscible liquids

- Pour the mixture into a separating funnel and some distilled water
- Add the stopper and invert the flask to mix the mixture
- Equalise the pressure by opening the stopper as required
- Continue shaking until there is no 'whistle' sound
- To collect the water in the lower layer, open the stopper and place a beaker under the spout
- Use another beaker to collect the desired organic layer
- Shake the liquid with some drying agent



Name two drying agents



Name two drying agents

Magnesium sulphate

Calcium chloride



How to use drying agents



How to use drying agents

- Add a selected drying agent to the organic product
- If the drying agent forms clumps add some more until they are moving freely
- Use gravity filtration to collect the dry product.
- Filtrate is the product



What does re-distillation mean?



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When a liquid is purified by using multiple distillations



How can unsaturated hydrocarbon be tested? What are the observations?



How can unsaturated hydrocarbon be tested? What are the observations?

Use bromine water

Add few drops of bromine water to the sample and mix well

Positive test - bromine water turns colourless



What are the reagents used to test haloalkanes and what are the observations?



What are the reagents used to test haloalkanes and what are the observations?

Reagents - silver nitrate, ethanol and water

Observations - chloro- : white precipitate

Bromo- : cream precipitate iodo- : yellow precipitate



What are the 3 reagents that can be used to test carbonyls?



What are the 3 reagents that can be used to test carbonyls?

Acidified potassium dichromate

Fehling's solution

Tollens' reagent



What are the observations when acidified potassium dichromate reacts with ketones and aldehydes?



What are the observations when acidified potassium dichromate is reacts with ketones and aldehydes?

Ketones - no change

Aldehyde - turns from orange to green colour



What are the observations when Fehling's solution is reacted with ketones and aldehydes?



What are the observations when Fehling's solution is reacted with ketones and aldehydes?

Ketones - no change

Aldehyde - dark red precipitate



What are the observations when Tollens' reagent is reacted with ketones and aldehydes?



What are the observations when Tollens' reagent is reacted with ketones and aldehydes?

Ketones - no silver mirror

Aldehydes - silver mirror



What are the reagents that can be used to test carboxylic acid? What are the corresponding observations?



What are the reagents that can be used to test carboxylic acid? What are the corresponding observations?

Universal indicator - pH of weak acid

Reactive metal - hydrogen effervescence

Metal carbonate - carbon dioxide
effervescence

