

17: The Apothecary's Cocktail

Three layer liquid

Have you ever wondered how the weird coloured liquids are created in science fiction films? You may have seen them bubbling away in round bottomed flasks and retorts.





These coloured solutions are a legacy of the apothecaries of the 18th century who were the equivalents of our modern day pharmacists. The apothecary's shop always had a large coloured bottle in the window.

Have a go at making your own cocktails. Ask your teacher to hunt around in the glassware store and find weird shaped vessels to store your concoctions.

What you will need

1 dm ³ measuring cylinder	potassium carbonate
500 cm ³ conical flask and bung	copper sulphate
500 cm ³ measuring cylinder	ethanol
filter paper	paraffin oil
filter funnel	dimethylbenzene (xylene) - dyed with Sudan III
eye protection	Note: An intermediate stage of this experiment needs to be left for several hours

What you do

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 Pour equal volumes of ethanol and distilled water into the conical flask.
- Keep adding solid potassium carbonate, with shaking, until no more will dissolve. This is a saturated solution.
- Put in the bung and leave the flask to stand. Two layers will form.
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 Add a few crystals of copper sulphate and stir well. Replace the bung and leave for several hours.
- Pour off the top layer of liquid (the supernatant). Filter the remaining solution and pour it into the measuring cylinder.
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 Add a few cm³ of the dyed dimethylbenzene (xylene). A deep red layer forms at the top. Next is a colourless layer of ethanol. At the bottom the blue aqueous (watery) layer contains dissolved copper sulphate.
- Seal the top with a paraffin layer and put in a bung. This will remain stable for several years.



eye protection
must be worn



HIGHLY
FLAMMABLE
ethanol



HARMFUL
dimethylbenzene
(xylene)
copper sulphate
crystals