Activity AA4.30 Making cosmetics

Part A: Bath salts

You are going to prepare some bath salts. Here is the formulation you will use:

- 3 measures of Epsom salts (magnesium sulfate)
- 2 measures of baking soda (sodium hydrogencarbonate)
- 1 measure of salt (sodium chloride)
- colour
- perfume

To do

a Decide what quantity of bath salts you are going to make and the best way to measure the ingredients. (The 'measure' unit refers to volume.)

b Measure the solid ingredients into a beaker. Mix well.

c Add a few drops of colour and perfume. Mix again.

d Transfer the mixture to a suitable container. Seal the container. The perfume and colour will take a little time to be absorbed evenly.

e Make a suitable label for the bath salts mixture, including the date and an ingredients list (in descending order of the amount present).

To answer

1 Explain why it was not necessary to weigh out the ingredients for this mixture.

2 What would be the important points to look for if you were choosing which grade of chemicals to use for the bulk manufacture of bath salts?

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Part B: Shampoo

You are going to prepare 100 cm^3 of shampoo.

To do

a Measure 50 cm^3 of detergent solution and 50 cm^3 of tap water into a beaker. Stir the mixture.

b Add half a spatula of sodium chloride. Stir gently with the glass rod to dissolve the salt but try not to make air bubbles.

c Add more salt and stir until it dissolves. Repeat this until the shampoo is the right thickness.

d Add a few drops of colour and perfume. Mix carefully.

e Transfer the mixture to a suitable bottle.

f Make a suitable label for the shampoo, including the date and an ingredients list (in descending order of the amount present).

To answer

1 What is the chemical term for the type of mixture that forms your shampoo?

2 Explain the purpose of each ingredient in the shampoo.

3 What other characteristics might be required in a shampoo, and what ingredients might provide these?

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Part C: Face cream

You are going to make a cosmetic emulsion of the kind used as a foundation for make-up in the theatre.

YOU MUST WEAR EYE PROTECTION

IRRITANT potassium hydroxide solution

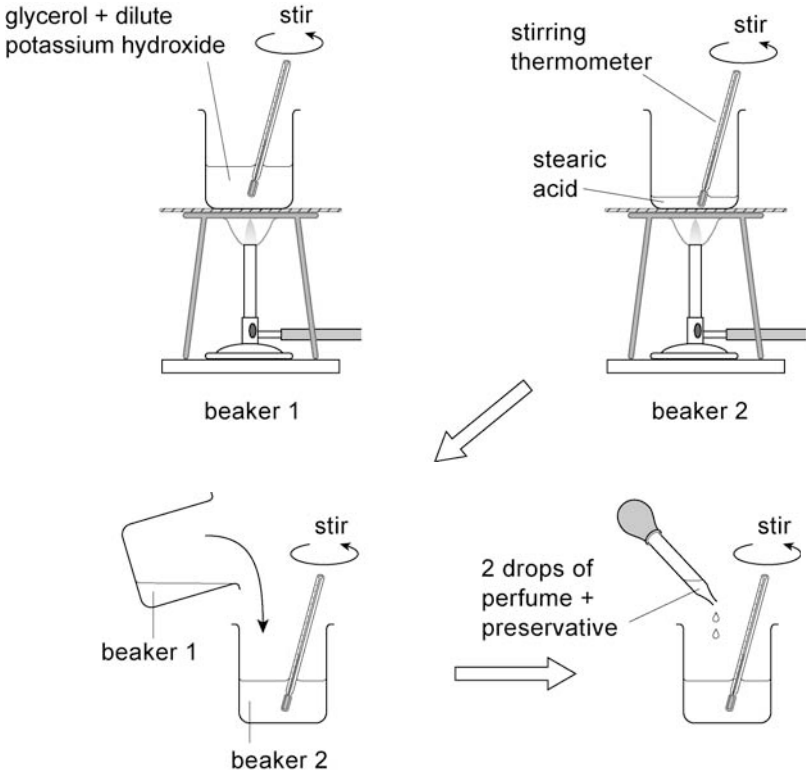
a Measure out 8 g of glycerol and 76 cm^3 of a very dilute solution of potassium hydroxide into a beaker.

b Warm and stir the mixture of glycerol and potassium hydroxide solution until the temperature is 75 °C.

c Measure out 15 g of stearic acid into a second beaker.

d Warm and stir the stearic acid until the temperature is 75 °C.

e Remove both beakers from the burners. Pour the solution of glycerol in potassium hydroxide into the molten stearic acid, stirring as you do so. Keep stirring until the temperature falls to below 50 °C.



f Add a drop or two of perfume and a very small amount of preservative. Stir well and put your product in a labelled jar.

g If you wish, test your product by rubbing a small amount into one area on the back of your hand. Apply make-up to both treated and untreated areas of skin. Test how easy it is to remove the make-up from each area with cotton wool.

To record

1 Describe what you see happening as you make your emulsion. What is your emulsion like when cold? Use these words: dissolve, melt, clear, cloudy, runny, thick.

2 How could you test to see whether or not your emulsion is a good foundation cream for stage make-up?