

Review 2

Chemistry - Key Stage 3

Particles - Lesson 16

Miss Mason



Review questions

Key words: soluble, insoluble, filter paper, funnel, evaporating basin, solvent, solute, solution.

1. Identify 2 differences between pure and impure substances.
2. Define 'mixture'.
3. Describe what filtering is used for.
4. Describe what evaporation is used for.
5. Calculate the percentage yield of pure salt from rock salt if the mass of the pure salt is 16.1g and the starting mass of the rock salt mixture was 42.3g. Give your answer to 1 decimal place.
6. Identify 4 pieces of equipment required for the process of distillation.
7. What is chromatography used for and how does it work?
8. Identify 2 factors that can affect solubility.
9. Describe the mobile and stationary phases in chromatography.
10. Write a 5 step method for an investigation into the solubility of different solutes in water.



Key word practise

- Match up the following key words to their correct definition

1. Soluble

2. Insoluble

3. Filtration

4. Evaporation

5. Solvent

6. Solute

7. Solution

a) The technique used to separate an insoluble solid from a solvent

b) A substance that others are able to dissolve in

c) The mixture produced from combining a solute and a solvent

d) Able to dissolve

e) The technique used to separate a soluble solid from a solvent

f) A substance that is able to dissolve

g) Unable to dissolve



Key word practise

- Match up the following key words to their correct definition

1. Distillation

2. Chromatography

3. Solubility

4. Mixture

5. Pure

6. Impure

a) The technique that separates solutes from a solution based on their solubility

b) Made up of more than one type of substance

c) The technique that separates liquids based on their boiling points

d) Made up of only one type of substance

e) Two or more elements or compounds not chemically bonded/joined

f) The mass of solids that can dissolve in 100cm³ of water



Distillation or Chromatography?

Distillation	Chromatography

Separates solutes based on their solubility

Involves both heating and cooling

Equipment includes heater, round bottomed flask, condensing tube and beaker

Equipment includes filter paper, beaker, solvent, lid

Must have a baseline drawn in pencil

Separates liquids based on their boiling points

Produces a chromatogram



Particle diagrams

Draw out diagrams and label the following:

1. A pure substance
2. An impure substance
3. A solute dissolved in a solvent
4. Rock salt



Which separation technique should be used for a mixture of...

Sand and water

Option 1

Filtration

Option 2

Evaporation

Option 3

Distillation

Option 4

Chromatography



Which separation technique should be used for...

Black ink

Option 1

Filtration

Option 2

Evaporation

Option 3

Distillation

Option 4

Chromatography



Which separation technique should be used for a mixture of...

Milk and water

Option 1

Filtration

Option 2

Evaporation

Option 3

Distillation

Option 4

Chromatography



Which separation technique should be used for a mixture of...

Ethanol and water

Option 1

Filtration

Option 2

Evaporation

Option 3

Distillation

Option 4

Chromatography



Which separation technique should be used for a mixture of...

Sugar and water

Option 1

Filtration

Option 2

Evaporation

Option 3

Distillation

Option 4

Chromatography



Exam-style questions

Zak has a sample of sea water and wants to separate the solid salt back from the water. Describe how he could do this.



Exam-style questions

Wajiha accidentally poured too much coffee into her mug when making her morning drink. She decided she wants to start all over again but some of the coffee has already dissolved in the water and there are some granules floating around in the mixture.

Describe the processes she could undertake in order to get all of the coffee separate from the water again.



Exam-style questions

Describe the changes of state that occur during the distillation process.

1. E_____

- The liquid mixture is h_____ until one of the liquids begins to e_____.
- During e_____, a l_____ turns into a _____.
- The particles s_____ o_____ and are no longer t_____.

2. C_____

- The g_____ particles enter the c_____ t_____ (or L_____ c_____).
- The cold w_____ surrounding the outside of the tube causes the vapour to c_____, turning back to a l_____ from a g_____.
- The particles move c_____ together and are t_____ again.

