

Topic	Separating techniques	Level	GCSE (or for students aged 11-16)
Outcomes	1. To select the appropriate separating technique to separate mixtures by chromatography, distillation, fractional distillation, filtration and crystallisation		

What to separate?	Best method(s) of separation to use
<u>Solute</u> from a solution	
<u>Solvent</u> from a solution	
<u>Liquid A</u> from a mixture containing three liquids A, B and C with similar boiling points	
<u>Magnesium</u> from a mixture of magnesium and salt	
<u>Salt</u> from a mixture containing salt, sand and water	
<u>Pure water</u> from a mixture containing salt, sand and water	
<u>Copper (II) sulphate</u> crystals from a mixture containing copper (II) sulphate and water	
Different <u>pigments</u> from plant leaves	
<u>Iron filings</u> from a mixture of sugar, iron and zinc	

What to separate?	Best method(s) of separation to use
<u>Solute</u> from a solution	Evaporation
<u>Solvent</u> from a solution	Distillation
<u>Liquid A</u> from a mixture containing three liquids A, B and C with similar boiling points	Fractional distillation
<u>Magnesium</u> from a mixture of magnesium and salt	Dissolve in water and filter
<u>Salt</u> from a mixture containing salt, sand and water	Filtration then Evaporation
<u>Pure water</u> from a mixture containing salt, sand and water	Distillation
<u>Copper (II) sulphate</u> crystals from a mixture containing copper (II) sulphate and water	Crystallisation
Different <u>pigments</u> from plant leaves	Chromatography
<u>Iron filings</u> from a mixture of sugar, iron and zinc	Use a magnet

Challenge!

How would you separate copper from a mixture containing magnesium, salt, water and copper?

You can use any chemicals and equipment found in the lab.

Challenge!

1. Filter to remove water and salt
2. Add dilute acid to react with magnesium
3. Filter again
4. Pure copper will be left