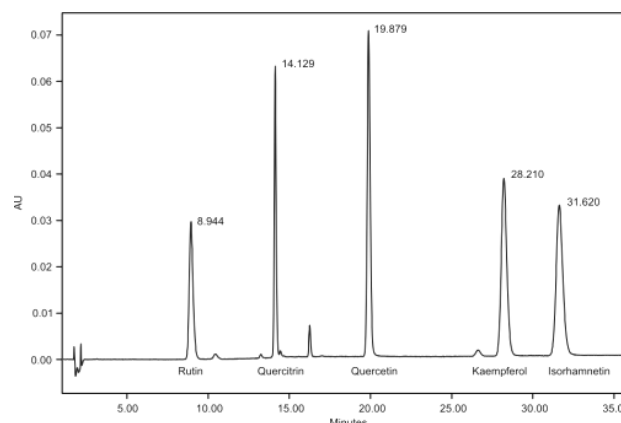


High Performance Liquid Chromatography (HPLC)

High Performance Liquid Chromatography is an instrumental analysis which will separate the mixture into its component parts. As the mixture passes through the instrument the substances in it are separated and recorded as a peak on a graph. The X Axis shows the retention time whilst the Y shows the concentration. Different substances travel through the apparatus at different rates, and therefore show up on a chromatogram as different retention times.

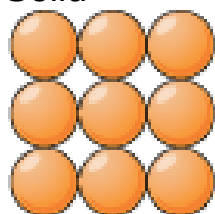


Even though HPLC is very accurate, some chemicals can have the same retention times. This is where using a Mass Spectrometer in unison with HPLC is useful, as the MS can tell what the element is straight away, without any problems. Otherwise it can be used to confirm the results of the HPLC Chromatogram.

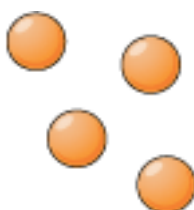
States of Matter and Kinetic Theory

All matter is made of tiny, invisible particles which can be atoms, ions or molecules. These particles are moving continuously (until they are cooled to -273.15°C) and if the temperature is increased they will move faster. This is kinetic theory:

Solid

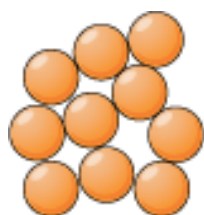


- Particles
- Far apart
- Cannot
- High
- Fixed
- Fill whole



Gas

- close together.
- be compressed
- Compressibility
- Volume and Shape
- container



Liquid

- Particles Close but free to move.
- Can be slightly compressed.
- Not as dense as solids
- Fixed volume
- Shape can move freely.

