

Chapter L

Fact Sheets

9/12

L1 Mass Spectrometers

- L1.1 What does a mass spectrometer actually measure?
- L1.2 a) What kind of particles move through the spectrometer?
b) Give one method of producing the particles.
- L1.3 a) The first region of the spectrometer contains a field - is it electric or magnetic? Is it aligned parallel or perpendicular to the beam?
b) What will happen to a heavier particle compared to a light one of the same charge?
- L1.4 The next region sometimes includes a device with electric and magnetic fields set up at right angles. What does this do?
- L1.5 a) The final region of the spectrometer contains a field - is it electric or magnetic? Is it aligned parallel or perpendicular to the beam?
b) What is the shape of the track of the particles in this part of the spectrometer?
c) What will happen to a heavier particle compared to a light one of the same charge?
- L1.6 In Time of Flight mass spectrometry the surface of the material is struck by a _____ beam, and batches of molecules are _____ and _____ towards a detector. The mass can be worked out from the time it takes the molecules to reach the detector. Fill in the blanks.
- L1.7 Give an advantage of time of flight mass spectrometry over the conventional kind.
- L1.8 Give a practical application of mass spectrometry.