1. The picture shows a piece of aluminium metal. Aluminium is an element.

1 (a) Explain how the particles in a piece of aluminium metal are held together and how the shape of the metal can be changed without it breaking.

You may use a diagram in your answer.

The electrons do not belong to specific atoms/delocalised electrons [1 mark]

metal atoms form positive ions [1 mark]

the attraction which exists between particles with opposite charges, holds the metal together [1 mark]

no specific bonds exist between adjacent atoms/ions [1 mark]

atoms/ions can slide over each other so allowing metals to bend/be shaped [1 mark]

(5 marks)

1 (b) Explain why metals are good conductors of electricity and suggest why this conductivity increases across the periodic table from sodium to magnesium to aluminium.

Some electrons in the structure are delocalised/free to move [1 mark]

These free electrons carry the electric current [1 mark]

From left to right across the period, atoms of elements have [1 mark] more free electrons

because they have more electrons in the outer shells [1 marks]

(4 marks)

(Total 9 marks)