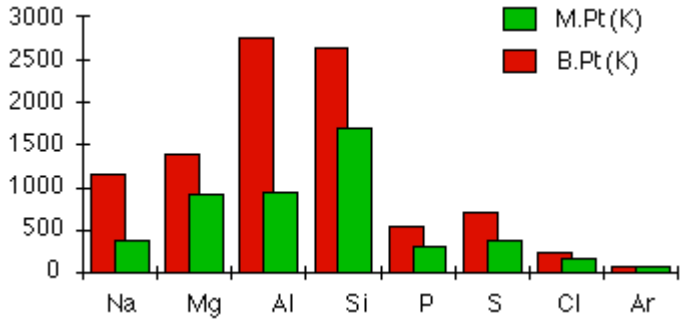
STRUCTURES OF THE PERIOD 3 ELEMENTS

This chart showing the melting and boiling points of the Period 3 elements comes from the Chemguide page you have just read.



The phosphorus values relate to white (yellow) phosphorus.

1. These elements include those with the following types of structure: simple molecular, giant covalent and metallic.

   a) Identify those elements which have a simple molecular structure, and draw diagrams to show the structures of each of their molecules.

   b) Identify any element(s) with a giant covalent structure, and draw diagram(s) to show the arrangement of the atoms in the structure(s).

2. a) Why does the boiling point increase as you go from sodium to magnesium to aluminium?

   b) Using the diagrams you drew in question 1, explain the way that melting and boiling point varies as you go from phosphorus to argon.

   c) Why does silicon have a very high melting and boiling point?

   d) How does the electrical conductivity of the elements vary as you go across the period?