

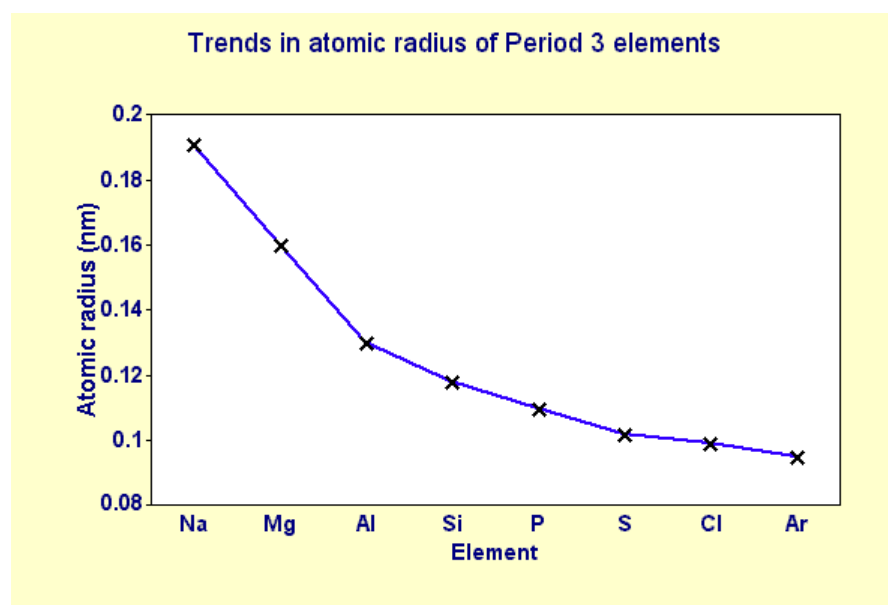
## Trend in atomic radius of Period 3 elements

The atomic radius decreases going across Period 3.

### Table of physical data

Element	Proton number	Symbol	Atomic radius (nm)
sodium	11	Na	0.191
magnesium	12	Mg	0.160
aluminium	13	Al	0.130
silicon	14	Si	0.118
phosphorus	15	P	0.110
sulphur	16	S	0.102
chlorine	17	Cl	0.099
argon	18	Ar	0.095

### Graph of physical data



### Explanation of this trend

Going across Period 3:

- the number of protons in the nucleus increases so ...
- the nuclear charge increases ...
- there are more electrons, but the increase in shielding is negligible because each extra electron enters the same principal energy level ...
- therefore the force of attraction between the nucleus and the electrons increases ...
- so the atomic radius decreases.

As the number of electrons in each atom increases going across Period 3, you might expect the atomic radius to increase. This does not happen, because the number of protons also increases and there is relatively little extra shielding from electrons in the same principal energy level.