

• The more polarised they are, the more likely they are to thermally decompose as the bonds in the carbonate and nitrate ions become weaker



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protons), factors such as an increased shielding effect and a larger distance between the outermost electrons and the nucleus outweigh the attraction of the higher nuclear charge

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- As a result of this, the elements become more reactive going down the group as it gets easier for the atoms to lose two electrons and become 2+ ions
- This trend is shown by looking at the reactions of the Group 2 metals:
 - With dilute hydrochloric acid: **bubbles** of **hydrogen gas** are given off much faster indicating that the reactions become more vigorous
 - With oxygen: the metals get more reactive with oxygen down the group (Ba is so reactive, that it must be stored in oil to prevent it from reacting with oxygen in air)

Physical trends

• Going down the group, the elements become larger as the outer two electrons occupy a new **principal quantum shell** which is further away from the nucleus

The atomic radius of the Group 2 elements



The atomic radius of the Group 2 elements increases going down the group due to the addition of an extra principal quantum shell

Graph of the atomic radius descending Group 2



