

Group 2 elements :- Alkaline earth metals.

- There are 6 metallic elements in group 2 of periodic table.

Be, Mg, Ca, Sr, Ba and Ra

- Electronic Configuration :-  $[Noble\ gas]ns^2$

\* Hydration Enthalpies :-  $Be^{2+} > Mg^{2+} > Ca^{2+} > Sr^{2+} > Ba^{2+}$   
(decreases with increase in ionic size down the group).

\* Ionization Enthalpies :- As the atomic size ~~decreases~~ increases down the group, their ionization enthalpy decreases  
i.e.  $Be > Mg > Ca > Sr > Ba > Ra$ .

Physical Property :-

Flame Test :-

	Be	Mg	Ca	Sr	Ba
Colour -	No	No	Brick Red	Crimson red	Apple green

## Chemical Properties :-

- $M + X_2 \longrightarrow MX_2$  ( $X = F, Cl, Br, I$ )
- $M + 2HCl \longrightarrow MCl_2 + H_2$
- $M + (x+y) NH_3 \longrightarrow [M(NH_3)_x]^{2+} + 2[e(NH_3)_y]^-$
- Alkaline earth metals are strong reducing agents.

## Uses

- \* Beryllium — Manufacture of alloys.
- \* Magnesium — It forms alloys with Al, Zn, Mn and Tin.
  - Used in flash powders & bulbs.
  - Milk of magnesia (used as antacid in medicine)
- \* Calcium — extraction of metals from oxides.  
Also used to remove air from vacuum tubes.
- \* Radium — Used in radiotherapy, (treatment of cancer).