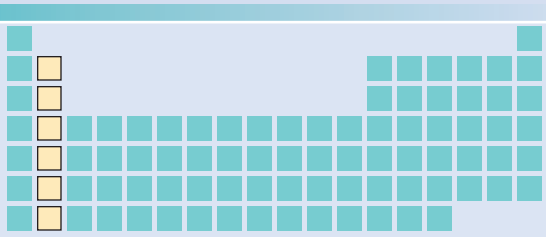
GROUP 2
ALKALINE EARTH METALS



CHARACTERISTICS

- do not occur naturally as free elements
- occur most commonly as the carbonates, phosphates, silicates, and sulfates
- occur naturally as compounds that are either insoluble or only slightly soluble in water
- consist of atoms that contain two electrons in their outermost energy level
- consist of atoms that tend to lose two electrons per atom, forming ions with a 2+ charge
- are less reactive than alkali metals
- form ionic compounds primarily
- react with water to form bases and hydrogen gas
- are good heat and electrical conductors
- are ductile and malleable
- have a silvery luster
- include the naturally radioactive element radium

4	Be	Beryllium	9.012 182	$[He]2s^2$
12	Mg	Magnesium	24.3050	$[Ne]3s^2$
20	Ca	Calcium	40.078	$[Ar]4s^2$
38	Sr	Strontium	87.62	$[Kr]5s^2$
56	Ba	Barium	137.327	$[Xe]6s^2$
88	Ra	Radium	(226)	$[Rn]7s^2$

Atomic radius increases

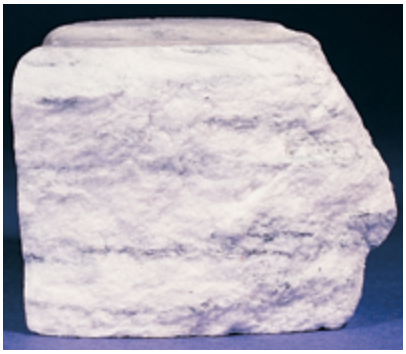
Ionic radius increases

Chemical reactivity increases

Electronegativity decreases

Ionization energy decreases

Calcium carbonate is a major component of marble.



Beryllium is found in the mineral compound beryl. Beryl crystals include the dark green emerald and the blue-green aquamarine. The colors of these gems come from other metal impurities.

The mineral dolomite, $CaCO_3 \cdot MgCO_3$, is a natural source of both calcium and magnesium.