

Fajon's Rule ⁽²⁾ Dr. Vijay Kumar Deptt. of Chemistry

A/c to this rule the increased covalent character of an ionic compd depends upon the following factors —

I) charge on cation :- As the charge on cation increases, its tendency to polarise the anion increases. This brings more and more covalent nature in the electrovalent compound.

Ex The order of covalent character in



Na^+	Mg^{2+}	Al^{3+}
mp 800°C	712°C	Sublimes.

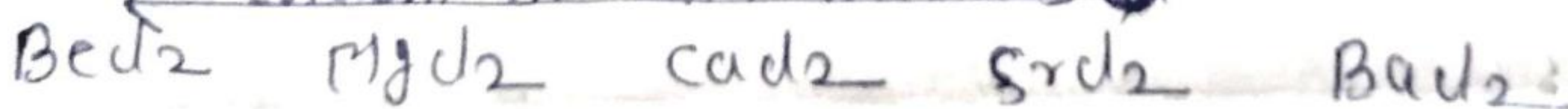
due to the increased charge on cations in the order $\text{Na}^+ < \text{Mg}^{2+} < \text{Al}^{3+}$



mp of the halides having higher O.S is lower than the halides of lower O.S. due to increased covalent character in higher O.S.

II Size of cation :- polarisation power of anion increases as the size of cation decreases. i.e., the electrovalent compds. having smaller cation show more of the covalent nature.

Ex the order of covalent character of halides of alkaline earth metals is



Cation	Be^{2+}	Mg^{2+}	Ca^{2+}	Sr^{2+}	Ba^{2+}
r^+	0.31 Å	0.65 Å	0.99 Å	1.13 Å	1.35 Å
mp	405°C	712°C	772°C	872°C	960°C

← m.p. decreases →

Low mp indicates more covalent