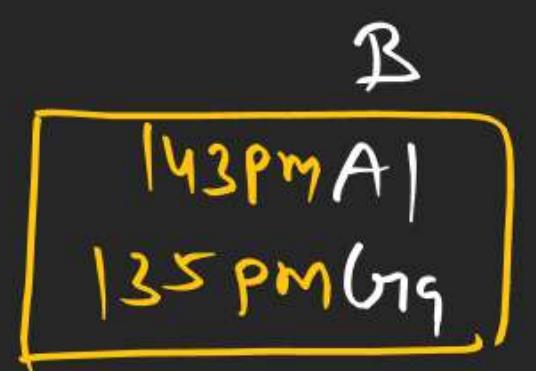


P-BLOCK13<sup>th</sup> group

B

Tl

① Conf.  $n^2 n p^1$ ② order of size $B < Al > Ga < In < Tl$  $B < Ga < Al < In < Tl$  $Al = 1s^2 2s^2 2p^6 3s^2 3p^1$  $ds \quad Ga = 1s^2 2s^2 2p^6 [3s^2 3p^6 3d^1] 4s^2 4p^1$ 

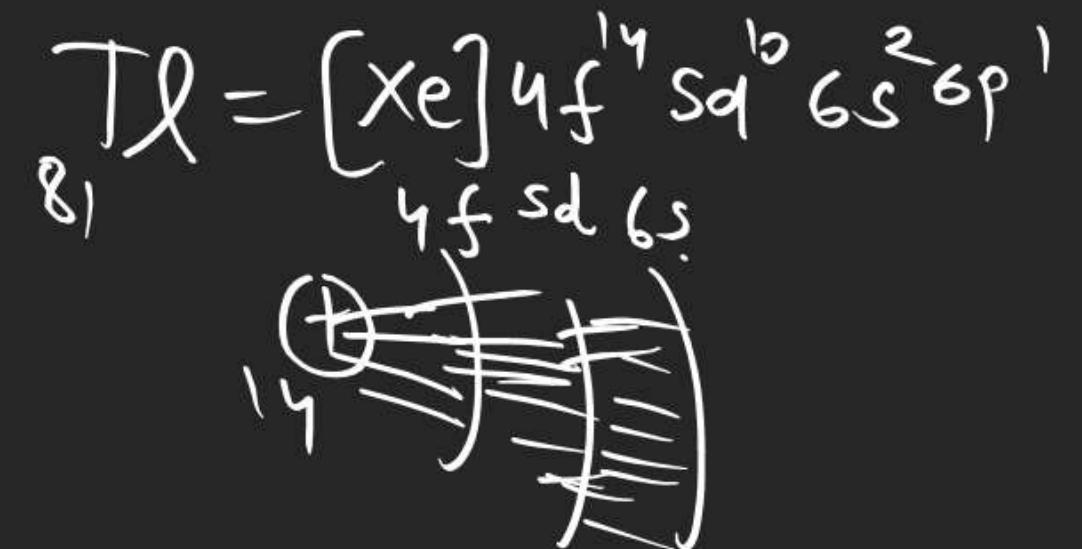
due to poor S.E of 3d subshell

## Order of I.E

B  
 Al  
 Ga  
 In  
 Tl

$$B > Al < Ga > In < Tl$$

$$B > \underline{Tl} > \underline{In} > \underline{Al} > \underline{Ga}$$



Boron Black Colour solid extremely Hard  
Having icosahedral structure ( $\underline{B_{12}}$ )

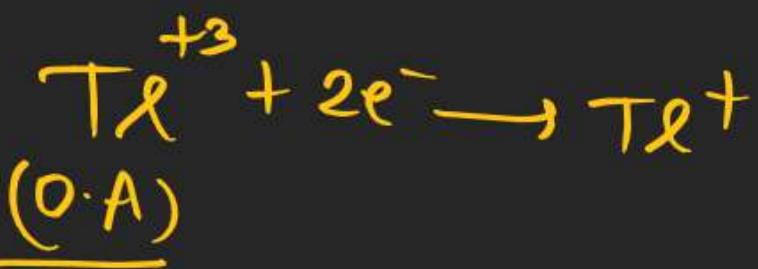
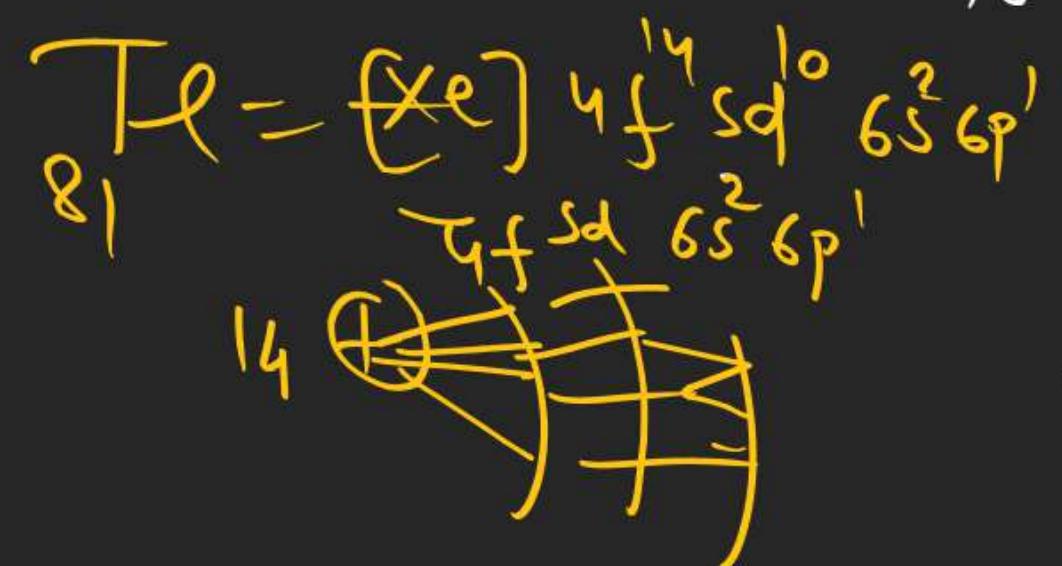
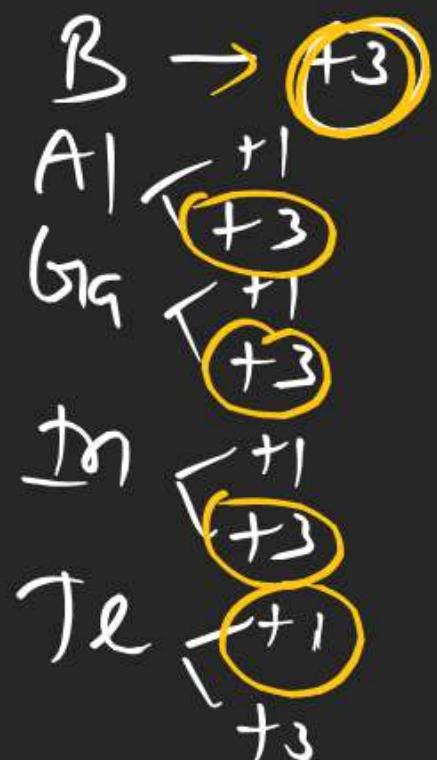
20 face and 12 corner

— other metals are soft and having  
low melting point.

— Ga has unusual m.p (303 K)  
It could exist in liquid state during Summer

Oxidation StateareS.E Power

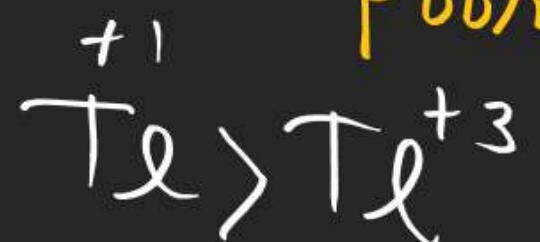
$$\boxed{S > P > d > f}$$

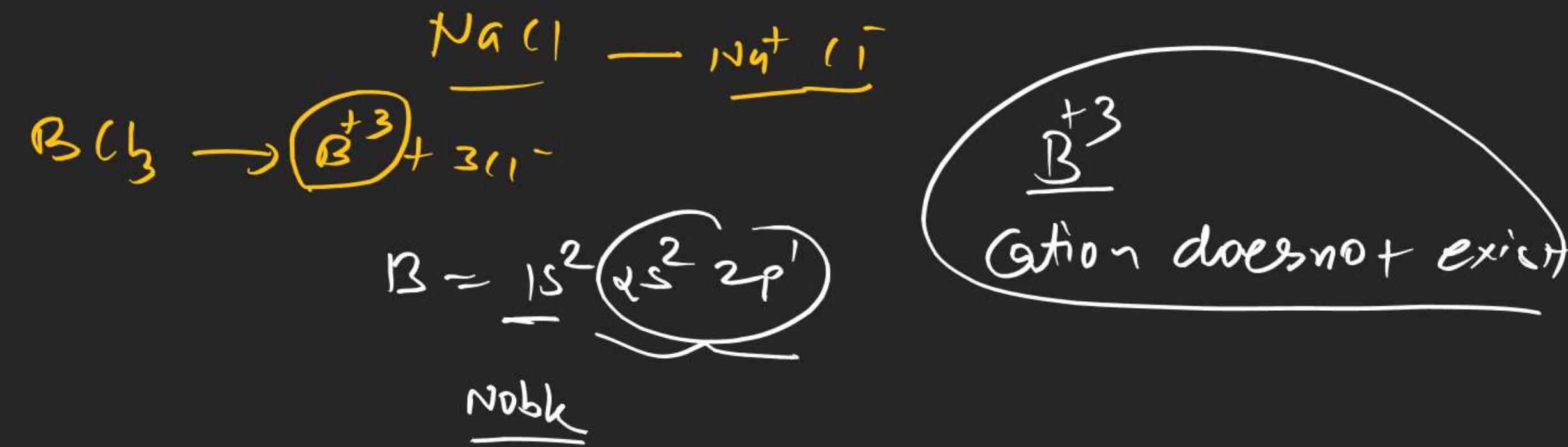


Gren. Higher oxidation

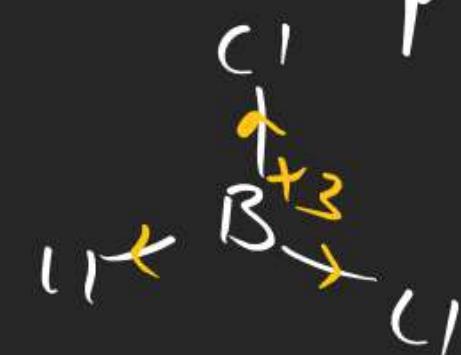
State is more stable than lower but in P-Block (13 to 15) group on moving down

lower oxidation state becomes more stable due to poor S.E of 4f sub-shell





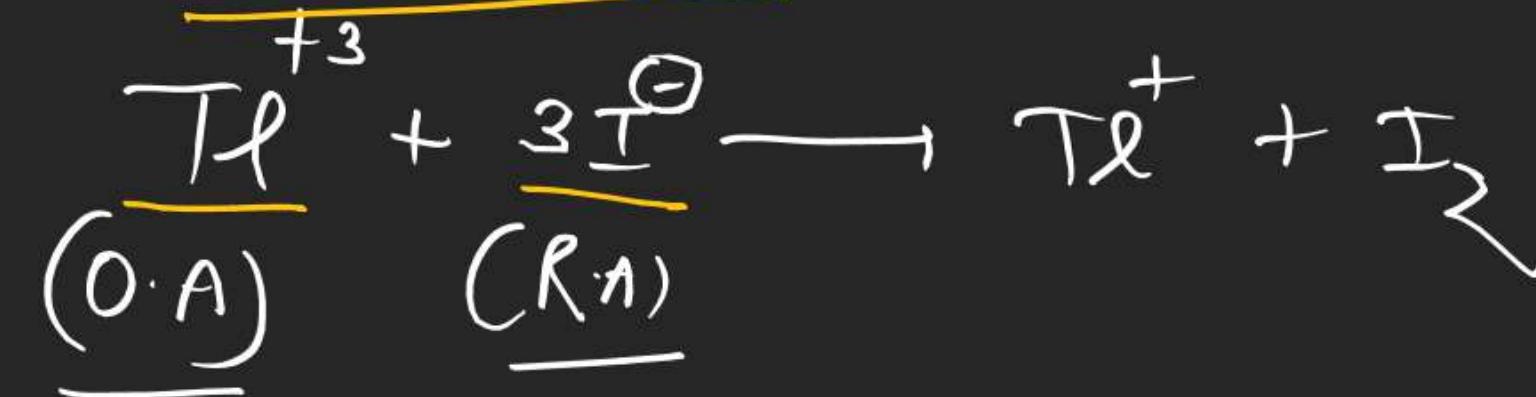
Why B does not show  $+3$  Cation  
 because of higher value of sum of  
three I.E., so Boron form covalent  
 compound.



## Reducing agent

$$\boxed{I^{\ominus} > Br^- > Cl^- > F^-}$$

we  $TlI_3$  does not exist explain why  
 Ans  $\rightarrow$  due to Redox



we  $TlI_3$  exists with  $I_3^{\ominus}$  explain why



due to absence of Redox Reaction  
 $Tl^+$  is not an oxidising agent

$$\underline{\underline{B}} = 1s^2 \underline{2s^2} 2p^1$$