

# CHEMICAL BONDING

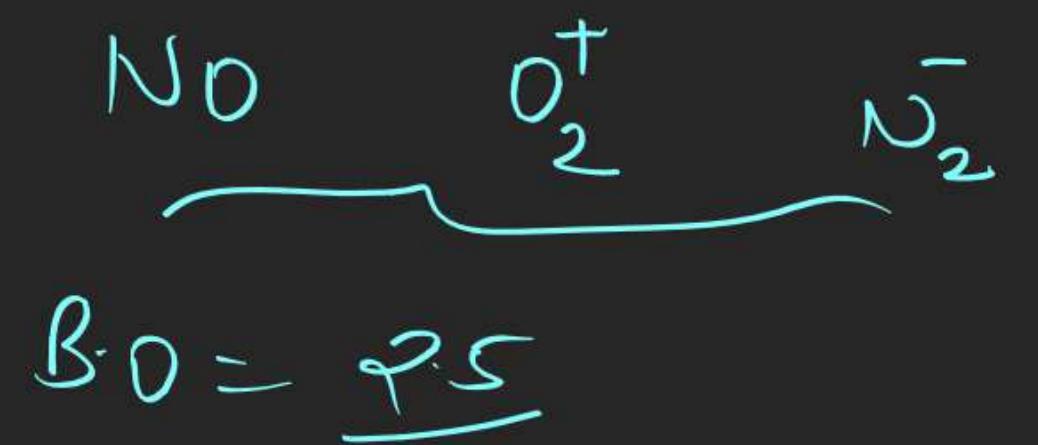
one find the bond order



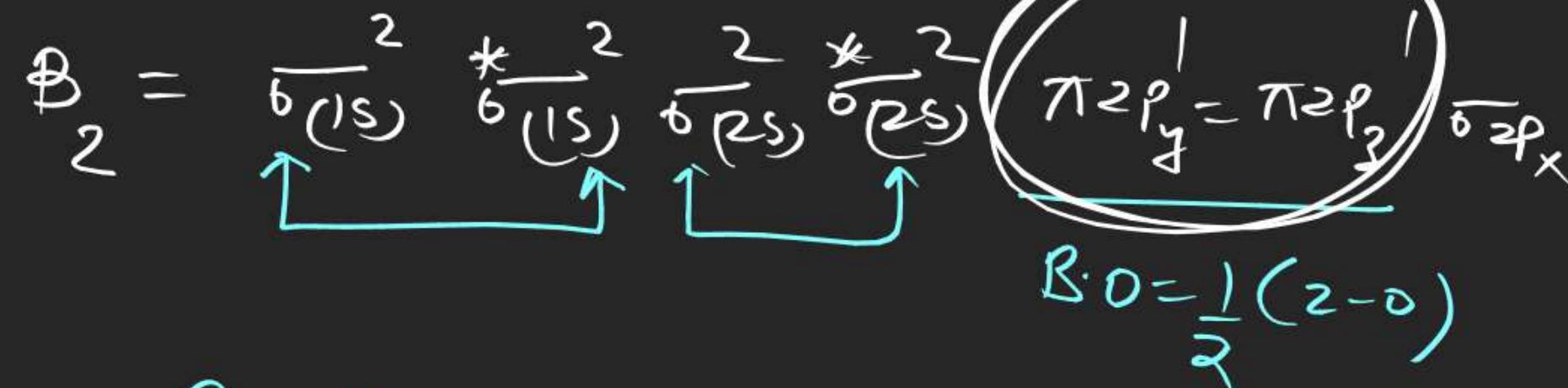
Key point  $\rightarrow$  iso electronic species have same bond order

one find the bond order

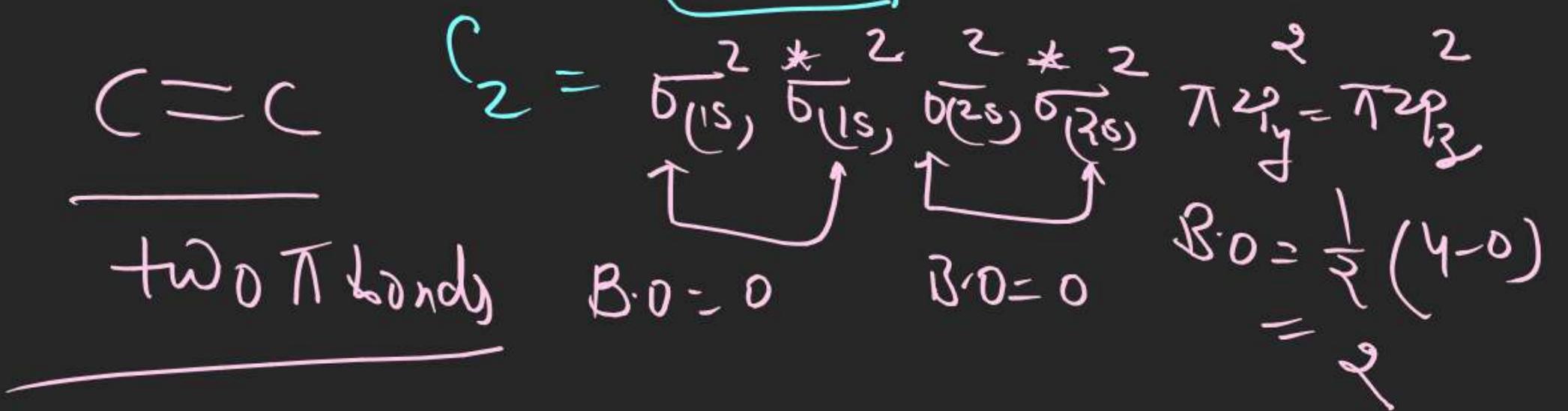


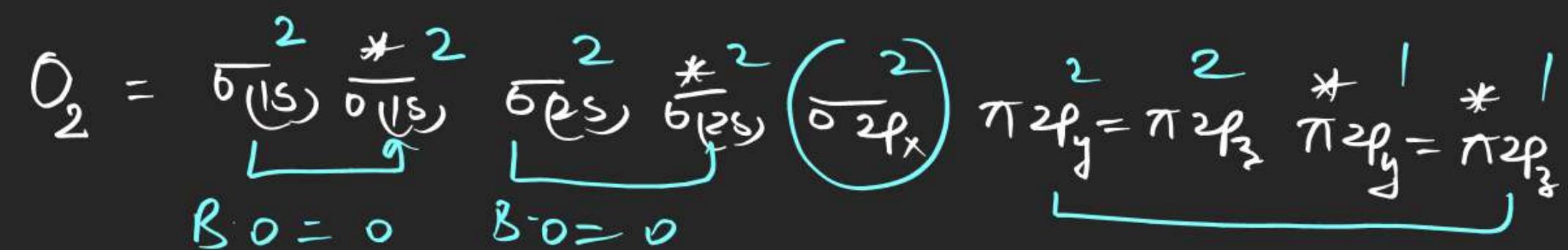


one find the number of  $\pi$  bonds in  $B_2$  and  $C_2$



$B-B$   
[ $\pi$  bond]





$$B-O = \frac{1}{2}(2-0) \quad B-O = \frac{1}{2}(4-2)$$

$$= 1 \quad = \frac{1}{2} \times 2$$

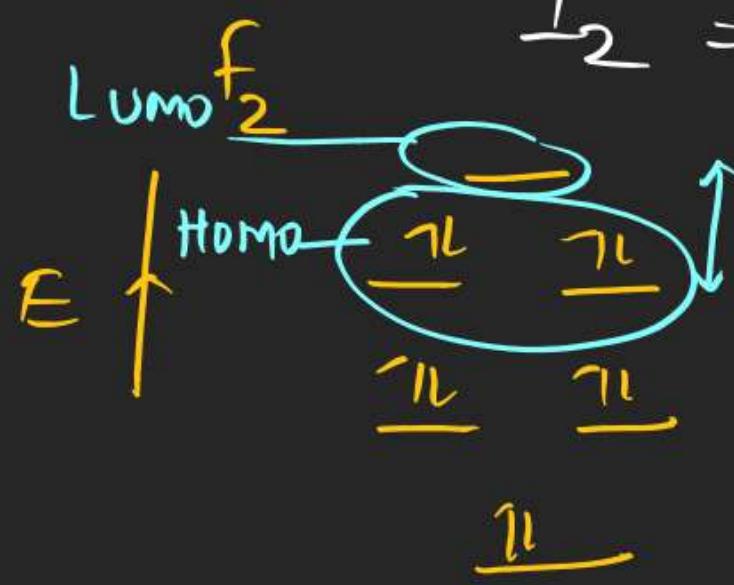
$$= 1$$

$O=O$

$(1\sigma, 1\pi \text{ bond})$

$$E = \frac{hc}{\lambda}$$

$F_2 \Rightarrow$  Pale yellow  
 $Cl_2$  = greenish yellow  
 $Br_2$  = reddish brown

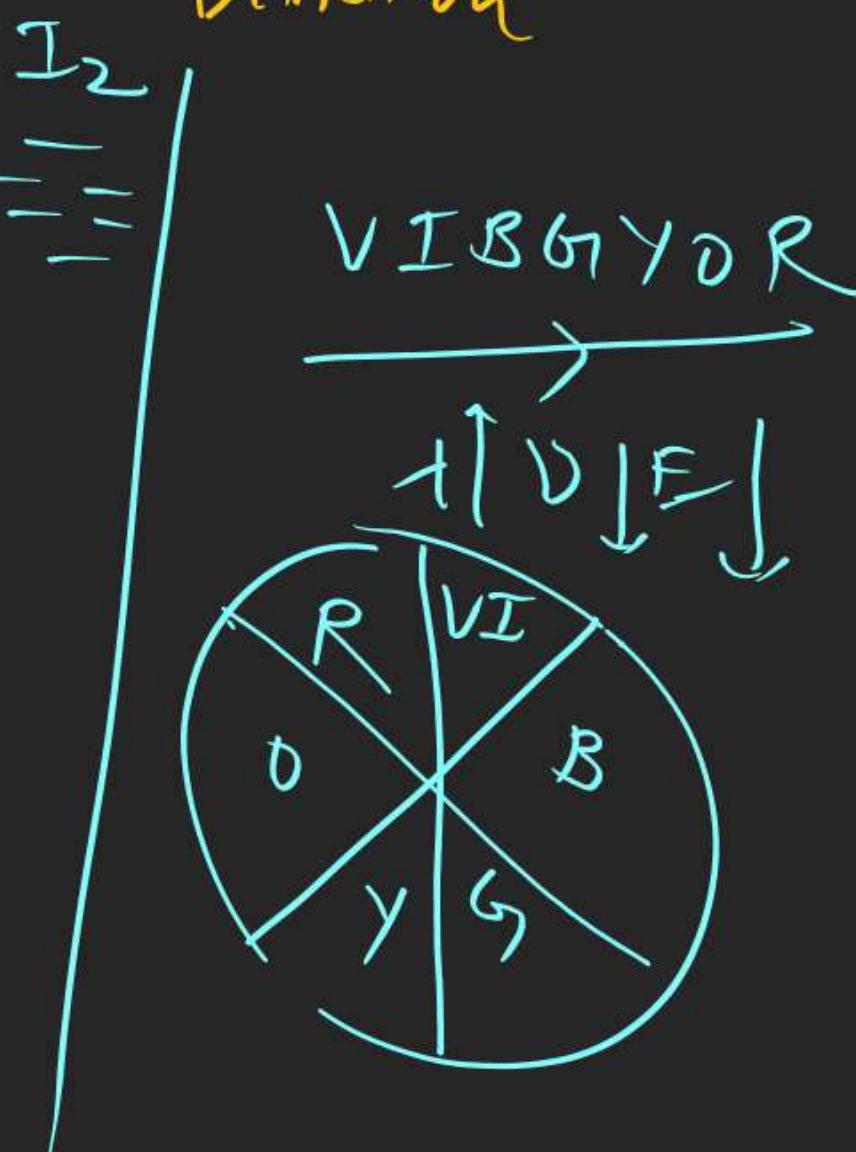


$I_2 =$  violet

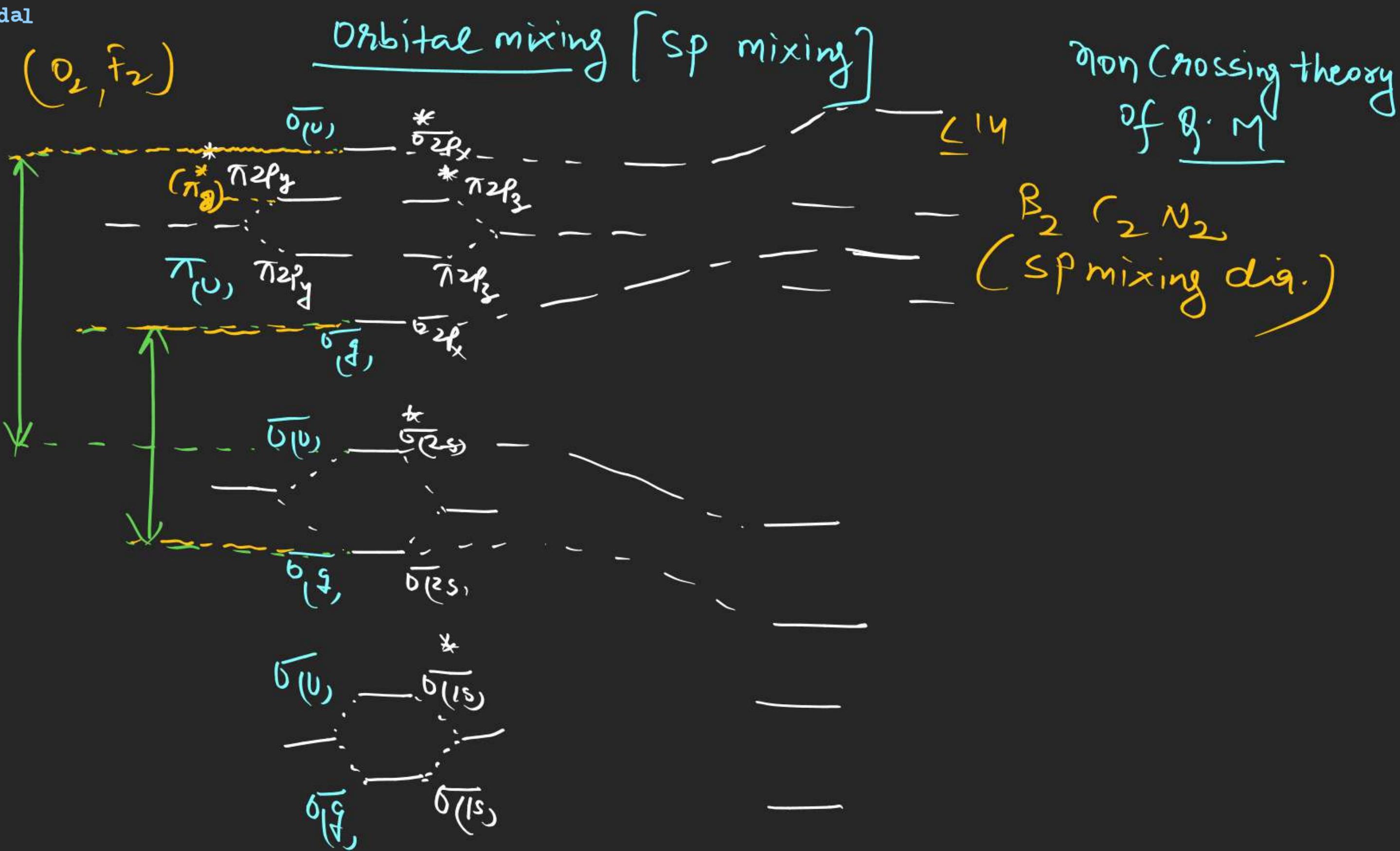


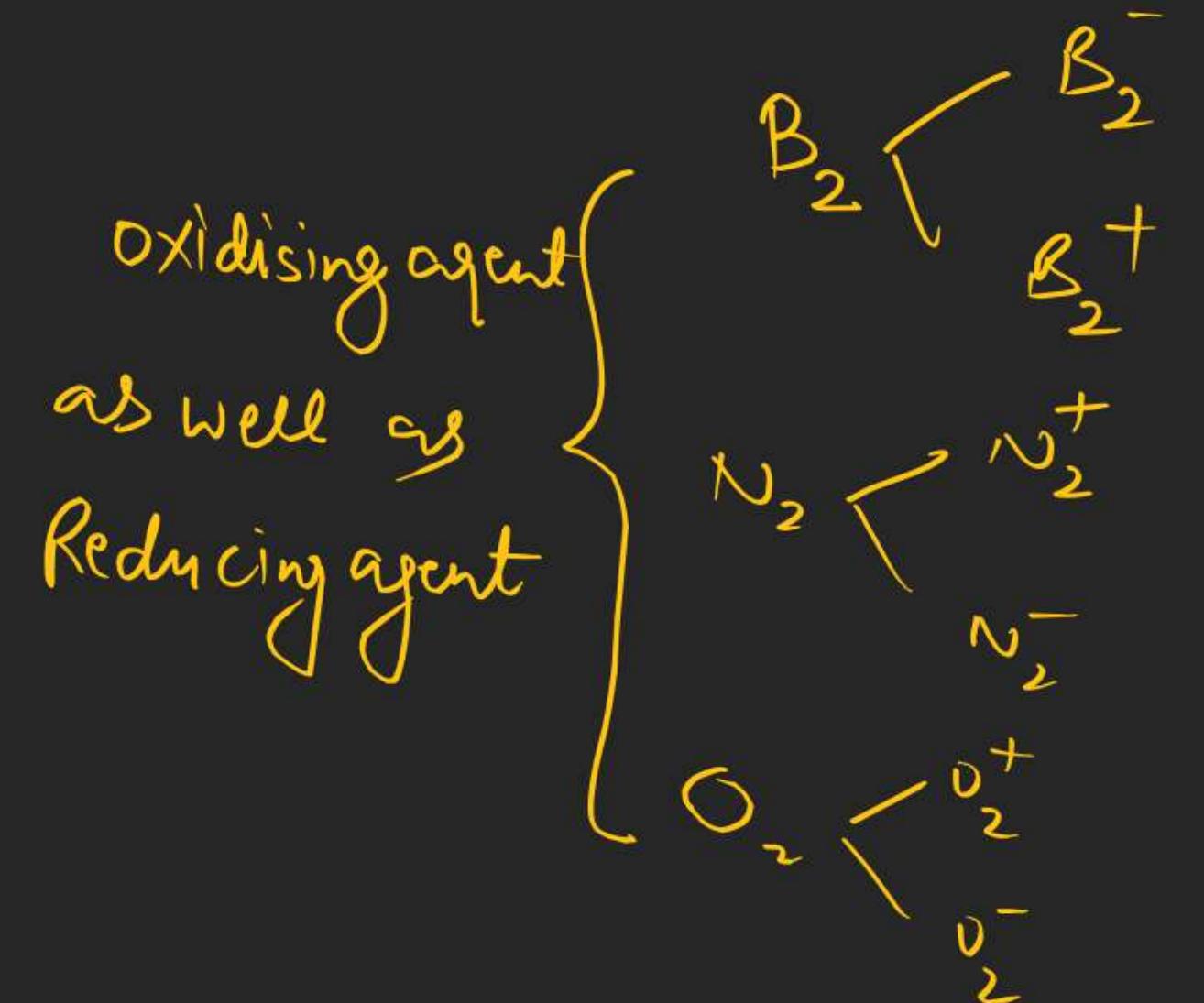
Ques Halogens molecules are diamagnetic and colourful explain why?

Ans = due to HOMO LUMO transition



When size  $\uparrow$  gap between HOMO LUMO  $\downarrow$



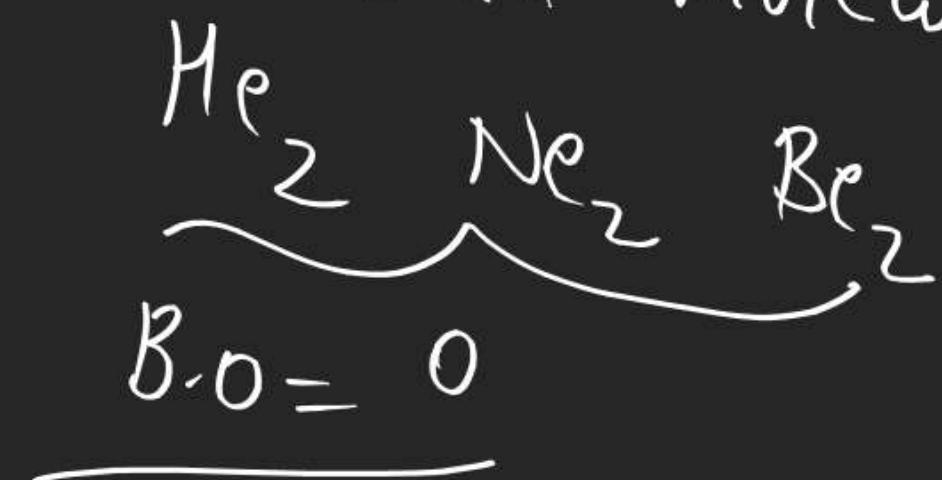


$B \cdot O =$  number of Covalent bond

$$B \cdot O = \frac{1}{2}(N_B - N_A)$$

Note  $\Rightarrow$   $B \cdot O$  can be +ive, neg.  
Zero and fractional

If  $B \cdot O$  becomes zero or neg.  
then molecule does not exist.



Note  $\Rightarrow$  if  $B.O$  becomes fractional  
then molecule it self unstable  
but relatively it is more stable



## Co-ordination Chemistry

In inorganic Chemistry Compounds are divided in three parts

### ① Simple salt

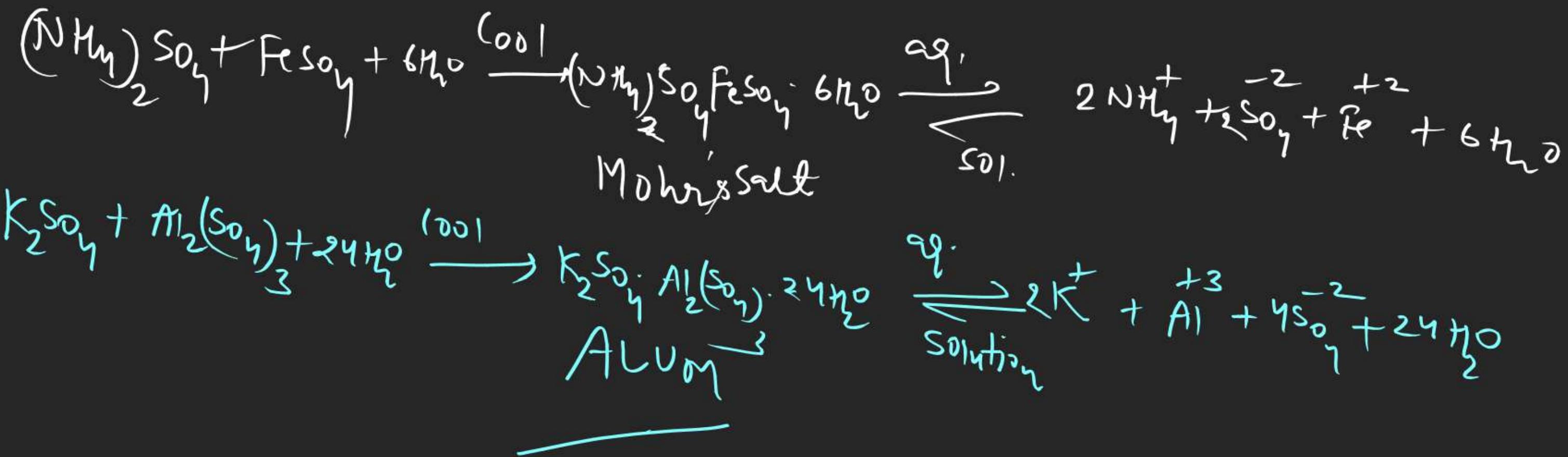
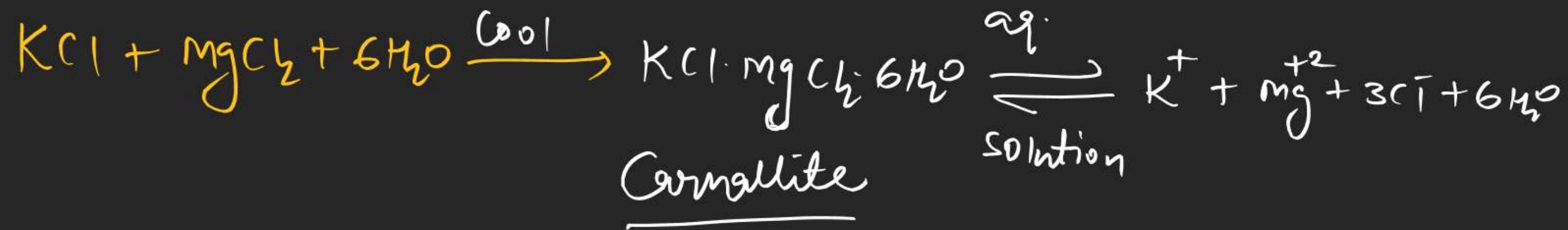


## Molecular addition compound.

When two or more than two simple salts are chemically combined in fix proportion by weight then they are called molecular addition compound.

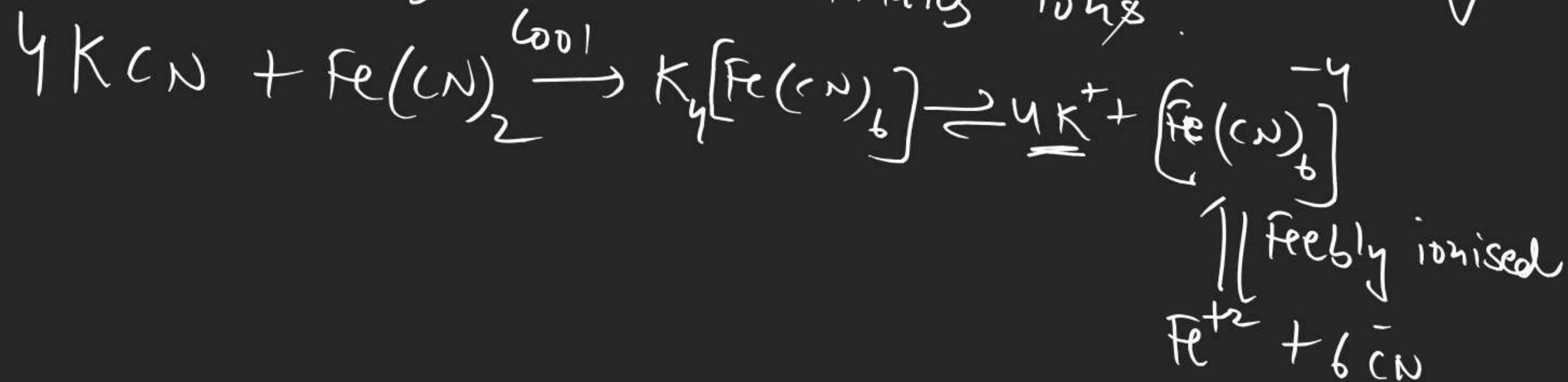
- ① Double Salt
- ② Complex Compound

① Double Salt ↳



# Complex Compound | Co-ordination Compound

Molecular addition compound which do not give test of its all constituents ions in their aq. Solution they do not lose their own identity but lose identity of their constituents ions.



# Chemical bonding

Sheet book

D<sub>PP</sub>

$$\frac{S_0}{S_0}$$
$$S_0$$
$$\underline{S_0}$$

$\left\{ \begin{array}{l} C_2(\text{solid}) \text{ does not exist} \\ B_2(\text{solid}) \text{ does not exist} \end{array} \right.$

$\left. \begin{array}{l} C_2(\text{vap.}) \\ B_2(\text{vap.}) \end{array} \right\} \text{exist acc-to MOT}$