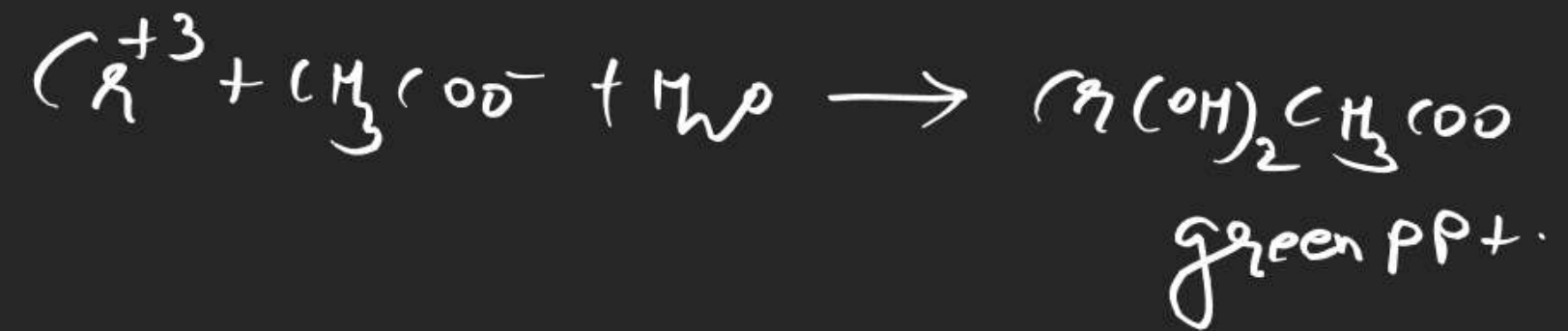
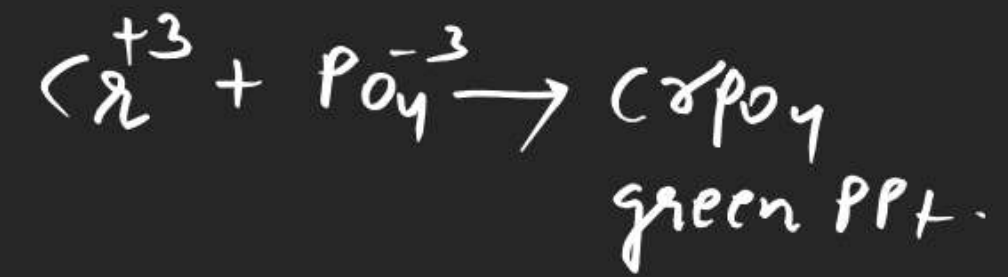
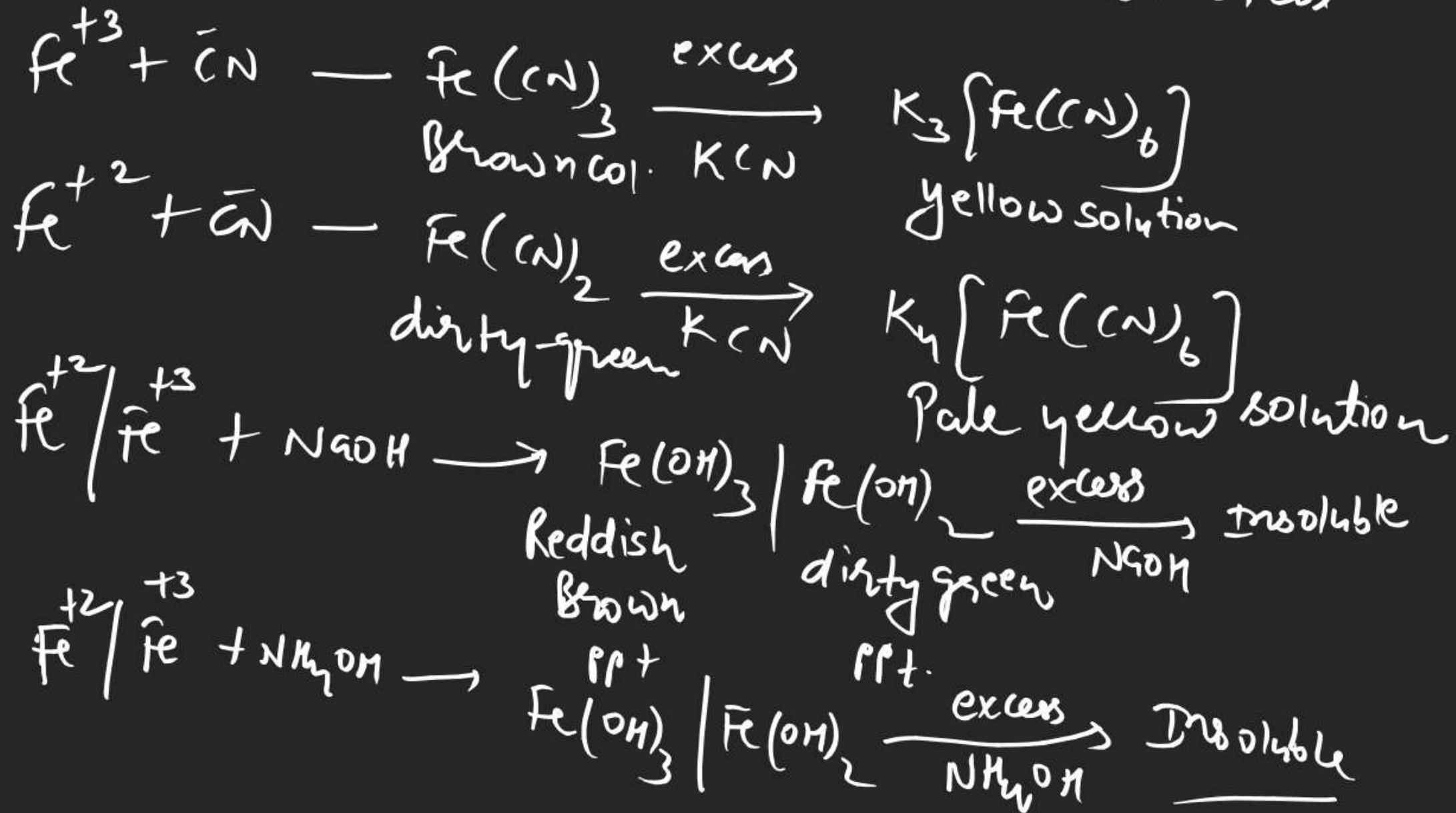
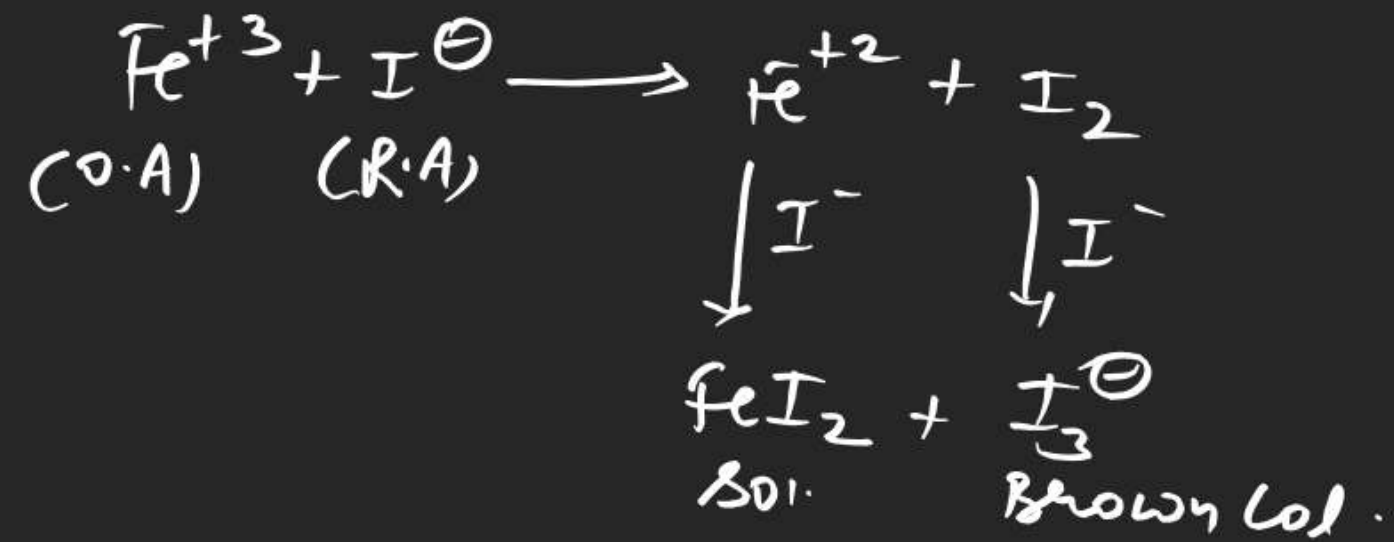
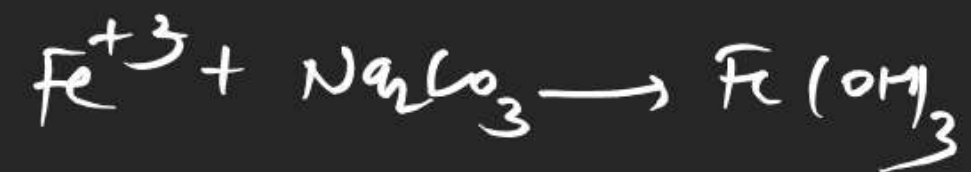


partial solution  
NH<sub>4</sub>OH sol.









Brownish Red ppt.

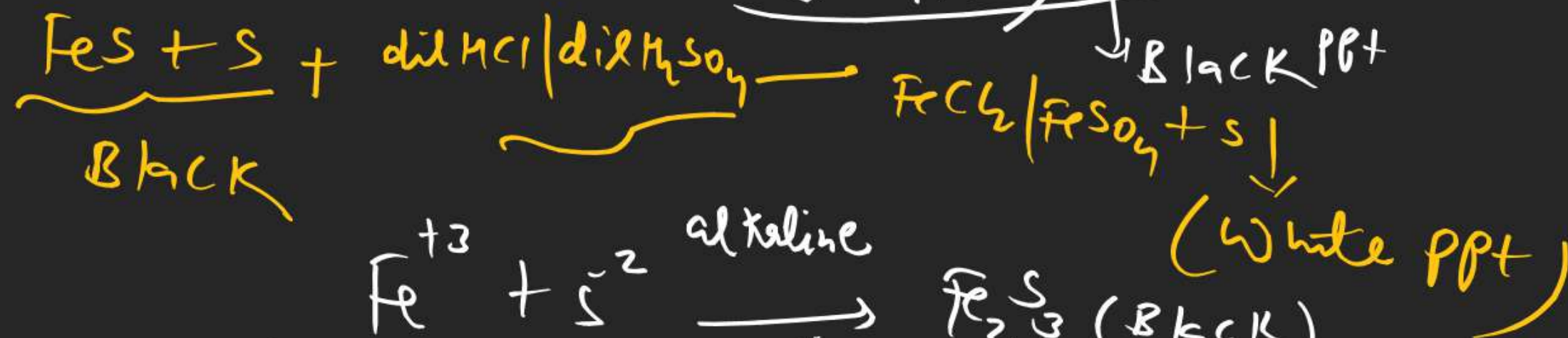
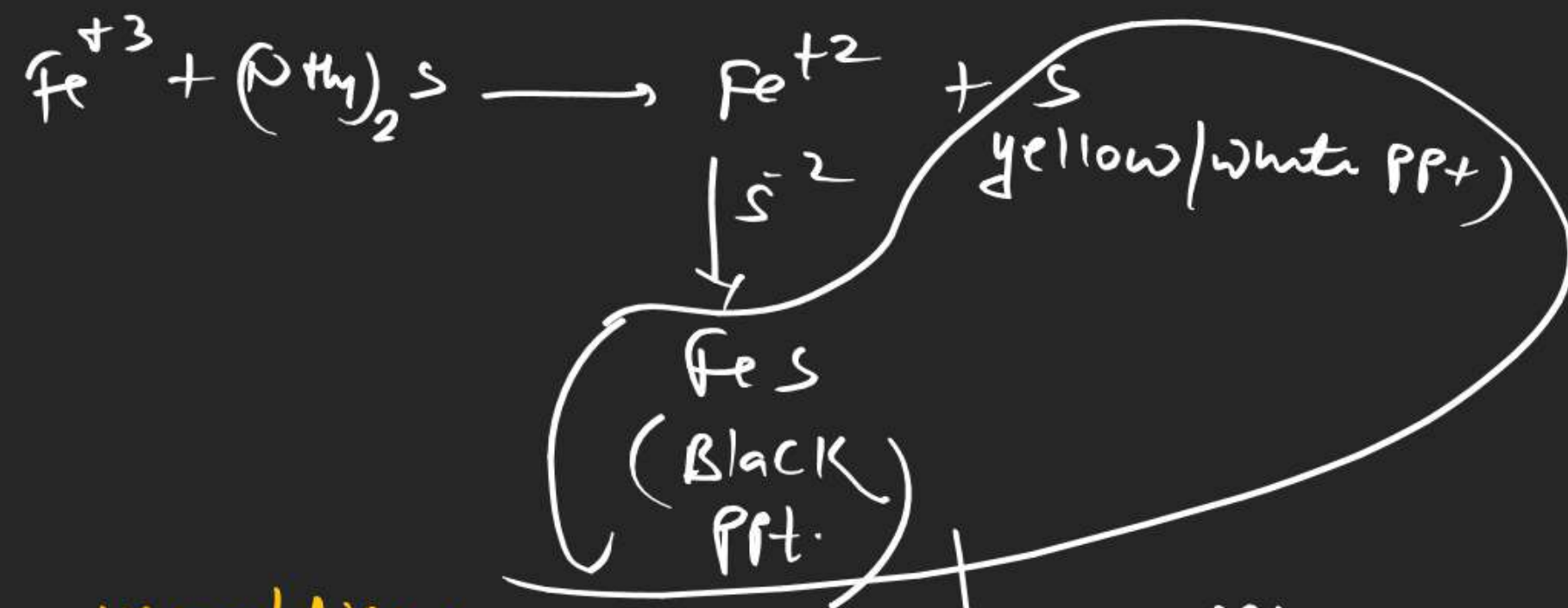
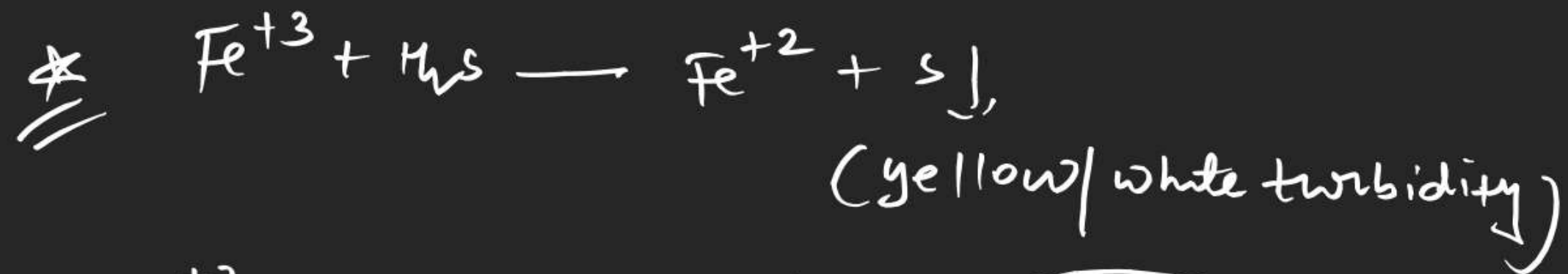
Note  $\Rightarrow \text{S}^{-2} \rightarrow (\text{Cr}^{+3} | \text{Al}^{+3} | \text{Mg}^{+2})$  Sulphides do not exist

in their aq-solution because they hydrolysed.

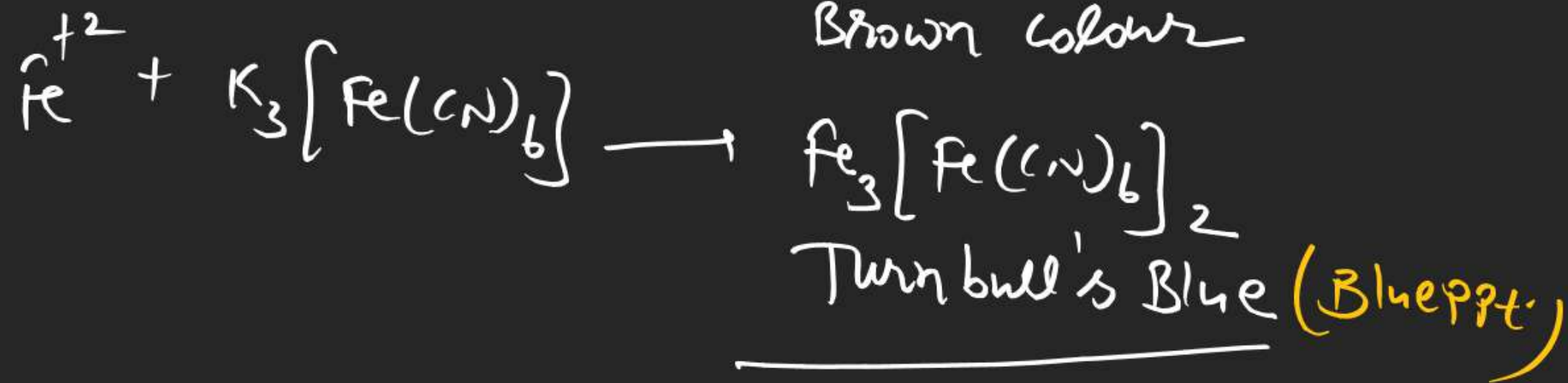
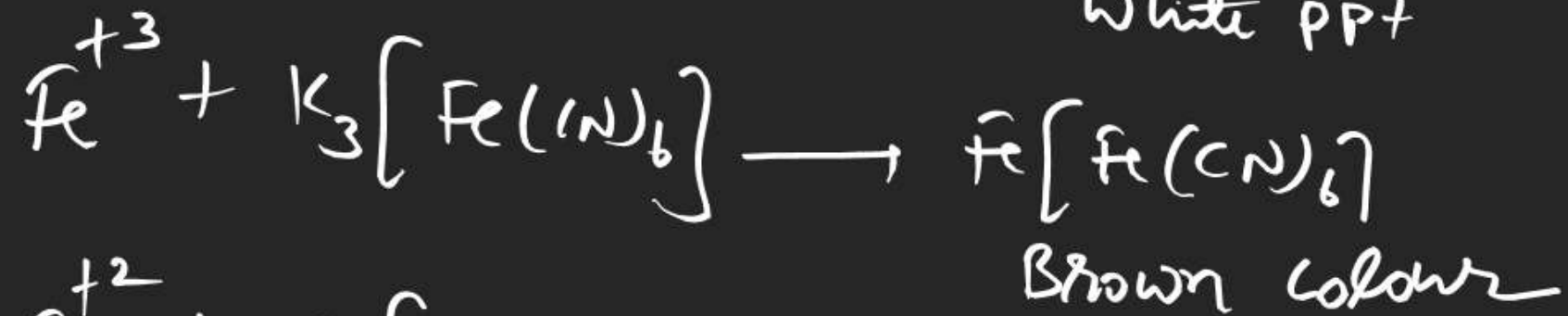
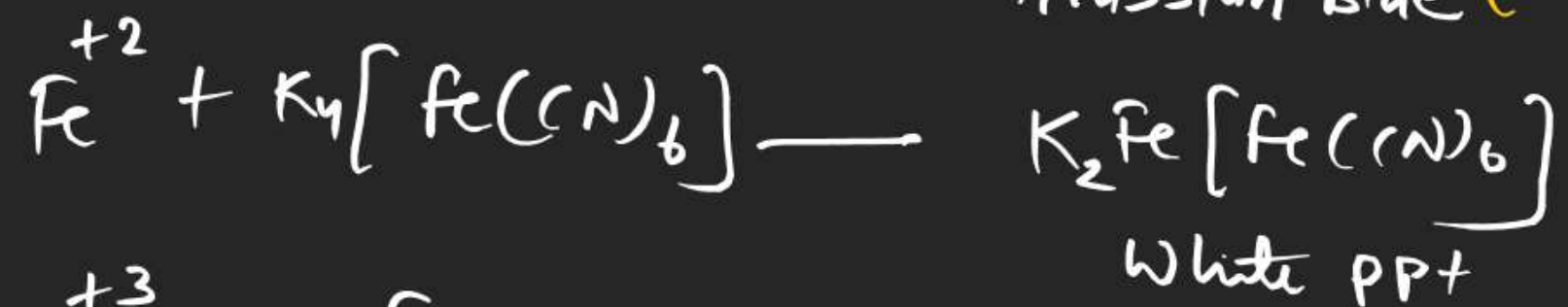
$\Rightarrow$  Carbonates salts of  $\text{Cr}^{+3} | \text{Al}^{+3} | \text{Fe}^{+3}$  do not exist in their aq-solution because they hydrolysed.

$\Rightarrow$  Some basic acetate of  $\text{Fe}^{+3} | \text{Al}^{+3} | \text{Cr}^{+3}$  are insoluble

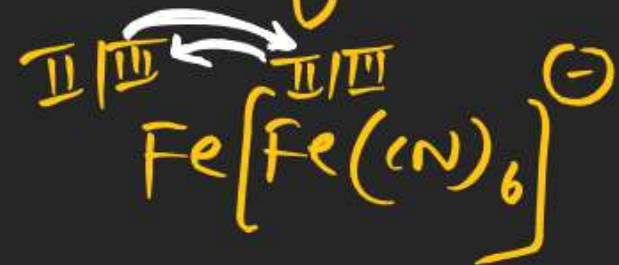




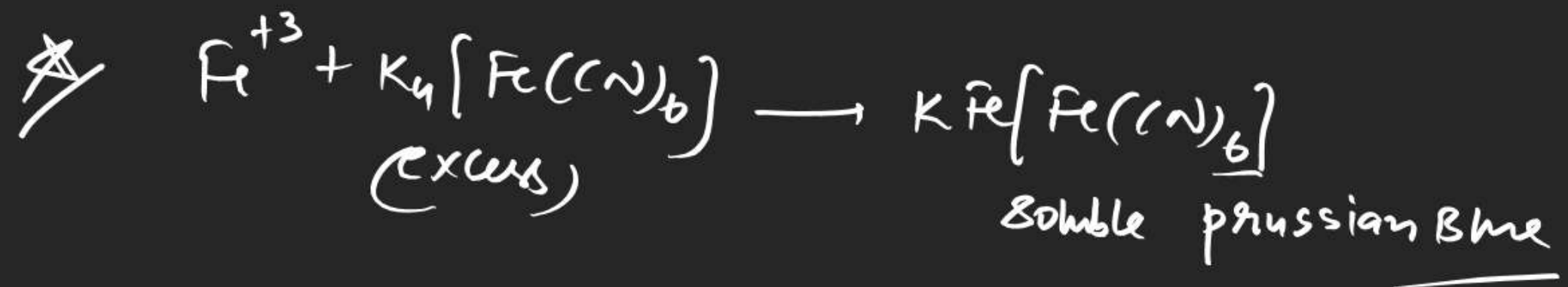
but on acidification it will decompose in  $\text{FeS} + \text{S}$



Prussian Blue and turn's blue both are identical and they can't be distinguished with massbauer spectroscopy hence they represent as common formula



Charge transfer metal to metal

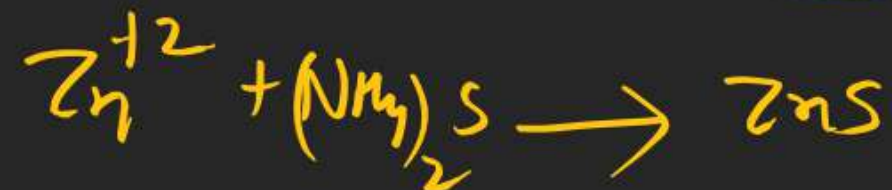
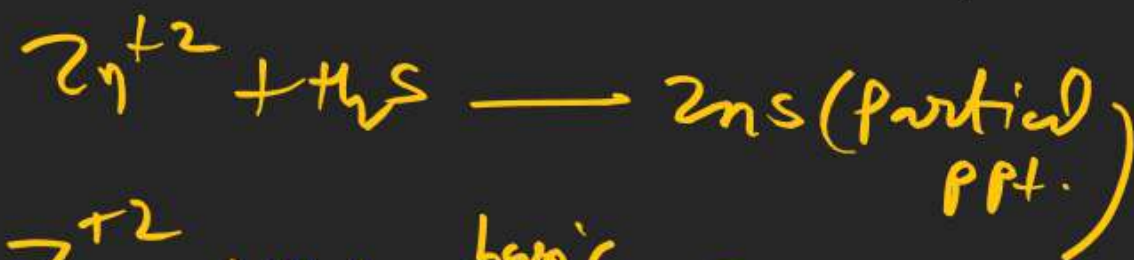
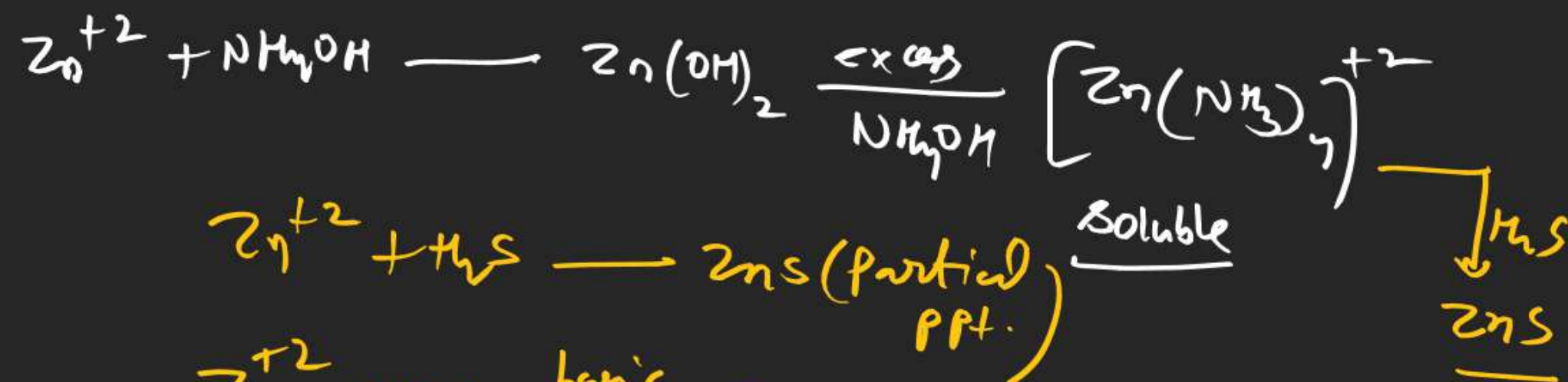
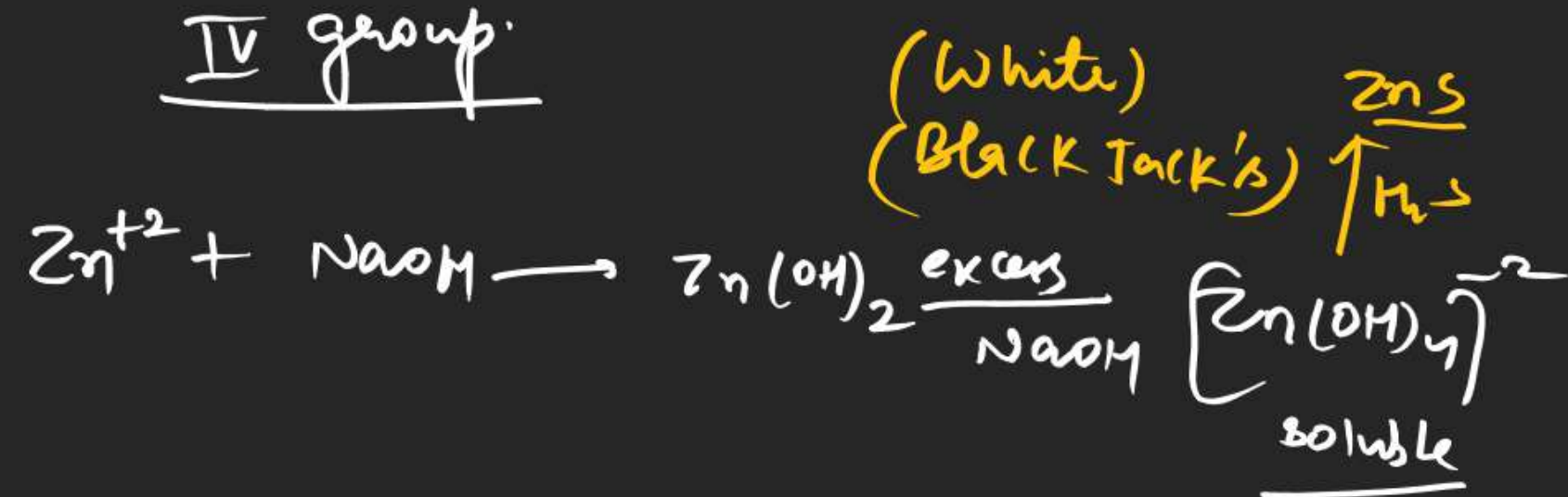


$\text{Fe}_4[\text{Fe}(\text{CN})_6]_3$  dissolved in oxalic acid

So Blue solution is formed

Which was used as Blue ink



IV group.



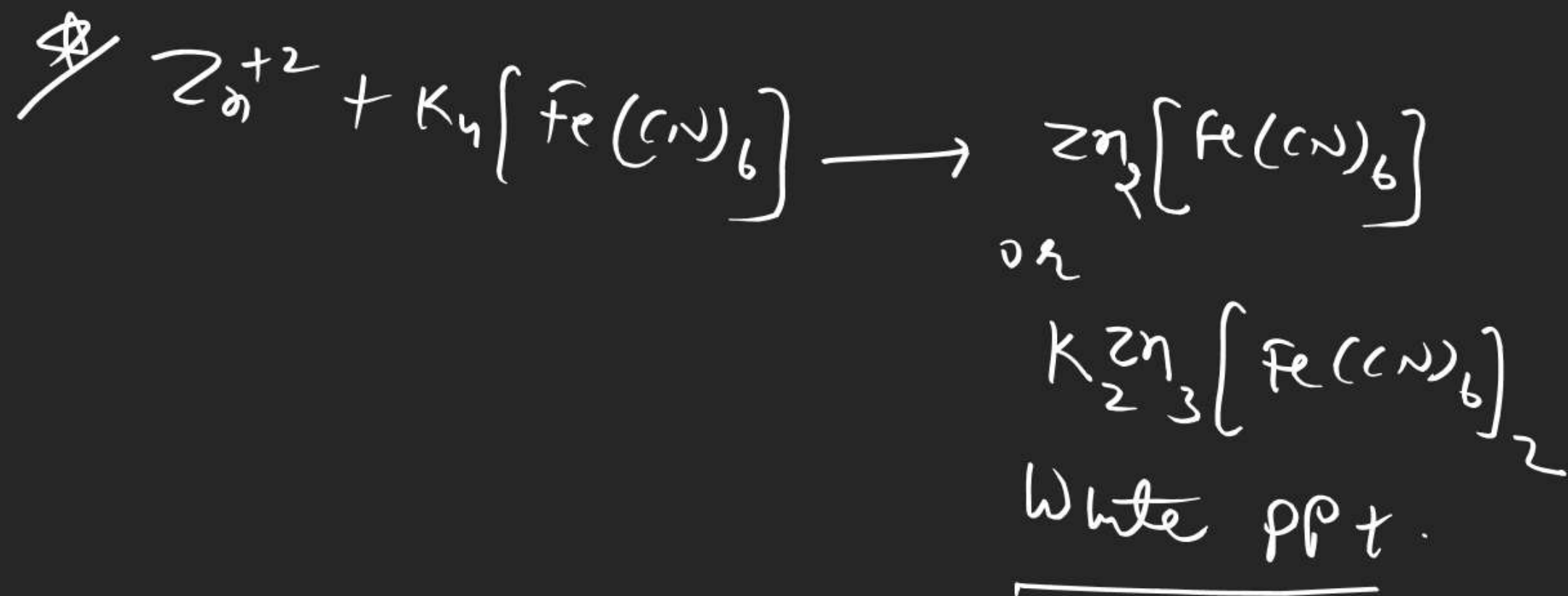
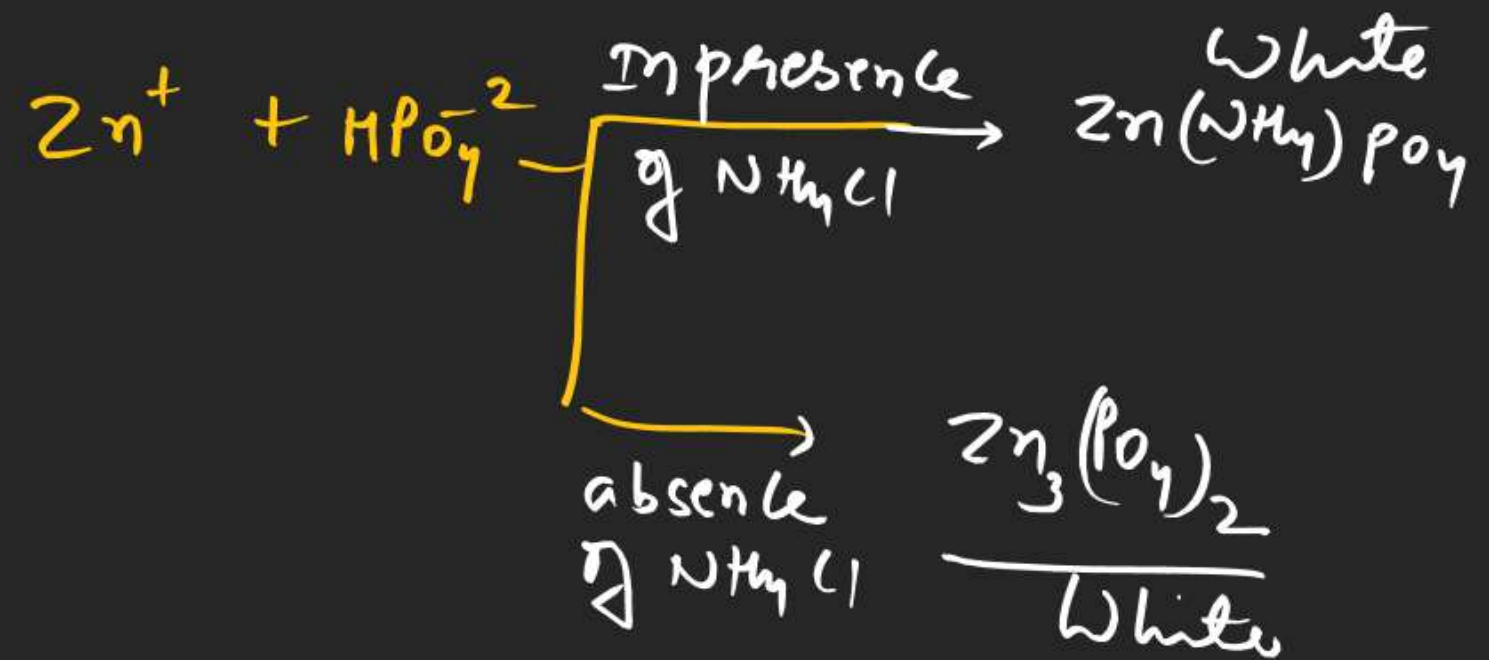
Basic Zinc  
Carbonate



(philosopher's wool)  
(Purest form of Zn)



Note  $\Rightarrow$  ZnS soluble in dil HCl but insoluble in  $\text{CH}_3\text{COOH}$



$Mn^{+2}$   
 $MnS \rightarrow$  Soluble in  $HCl$  and  $CH_3COOH$

$Mn^{+2} + NaOH \rightarrow Mn(OH)_2 \xrightarrow{\text{excess}} \text{insoluble}$   
 Pink-white

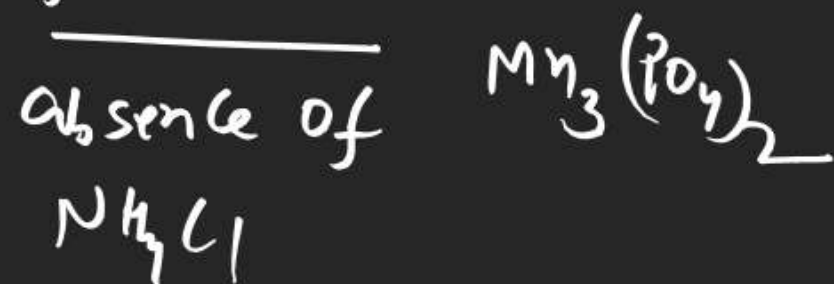
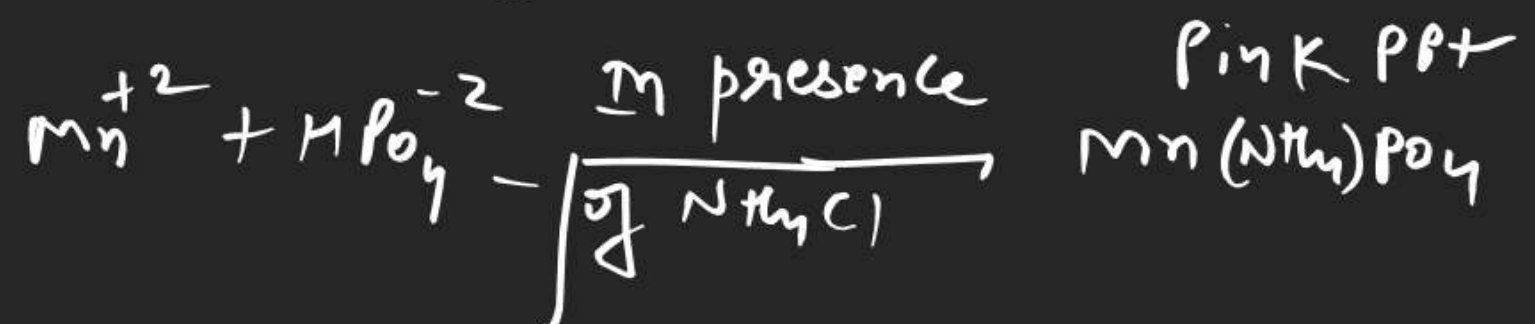
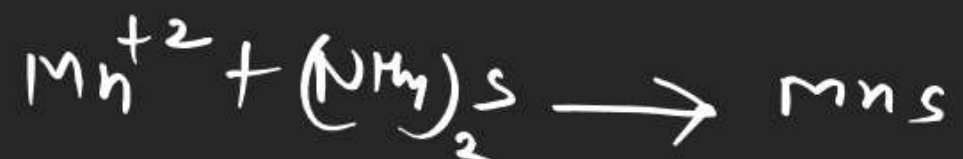
$Mn^{+2} + NH_4OH \rightarrow Mn(OH)_2 \xrightarrow[NH_4OH]{\text{excess}} \text{insoluble}$

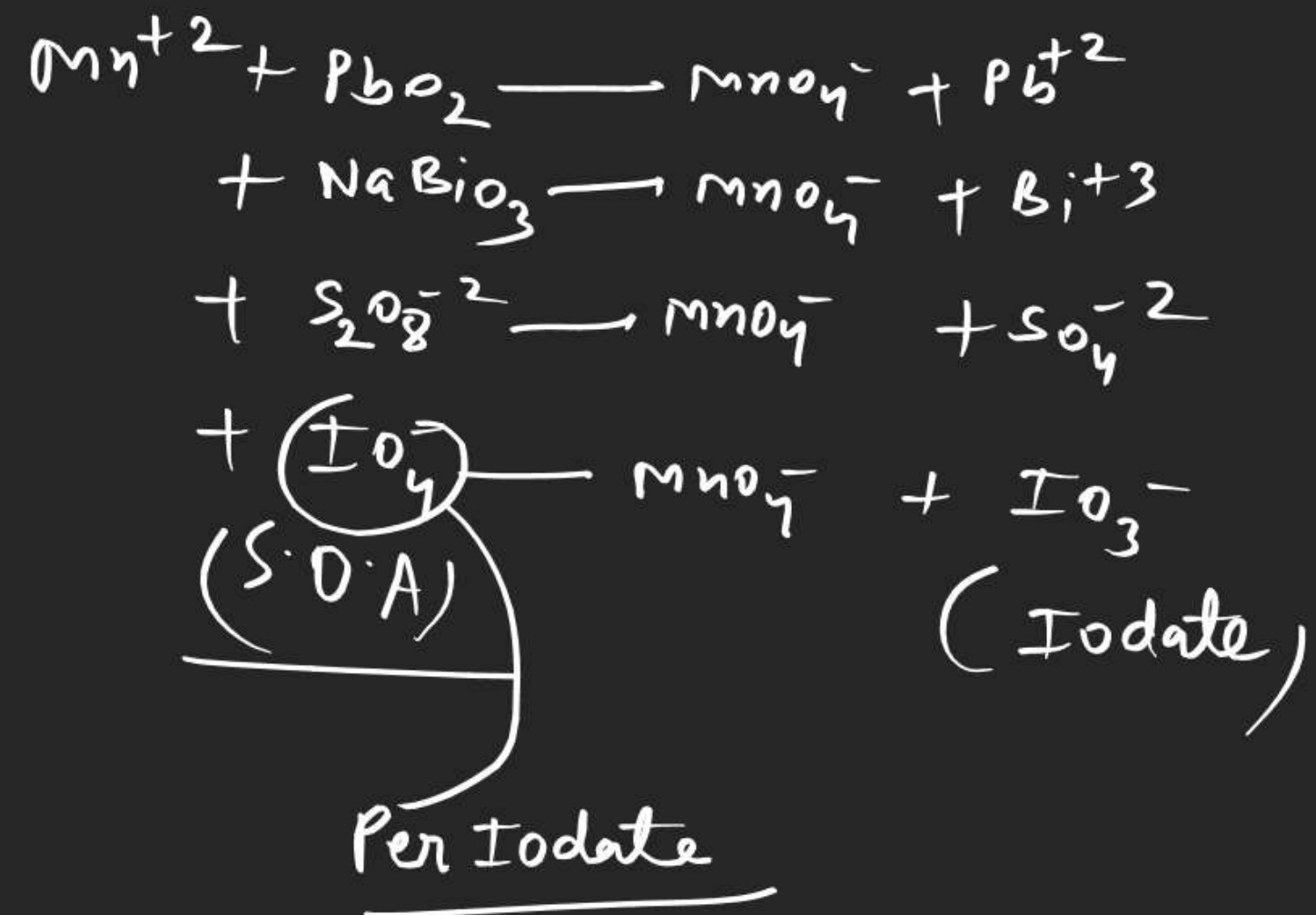
$Mn(OH)_2 \Rightarrow$  Soluble in  $NH_4$  salt.

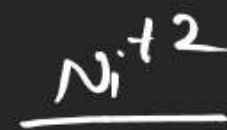
$Mn(OH)_2 \xrightarrow[o_2 \text{ (slow)}]{\text{atmospheric}} MnO_2 \cdot H_2O$  (hydrated  $Mn$  dioxide)  
 or  $MnO(OH)_2$

$Mn(OH)_2 \xrightarrow[H_2O_2]{\text{fast}} \underline{MnO(OH)_2}$   
Brown ppt.



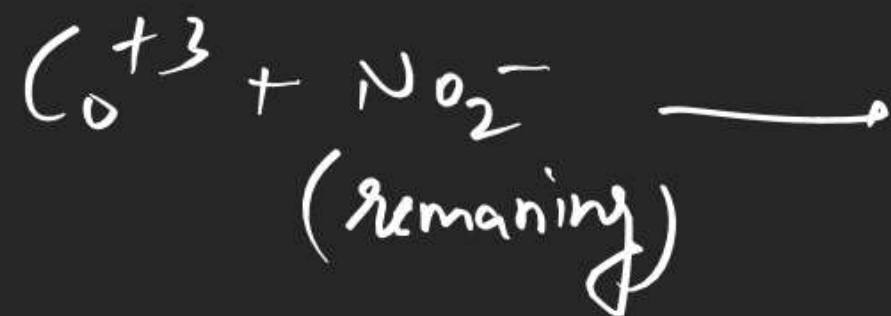
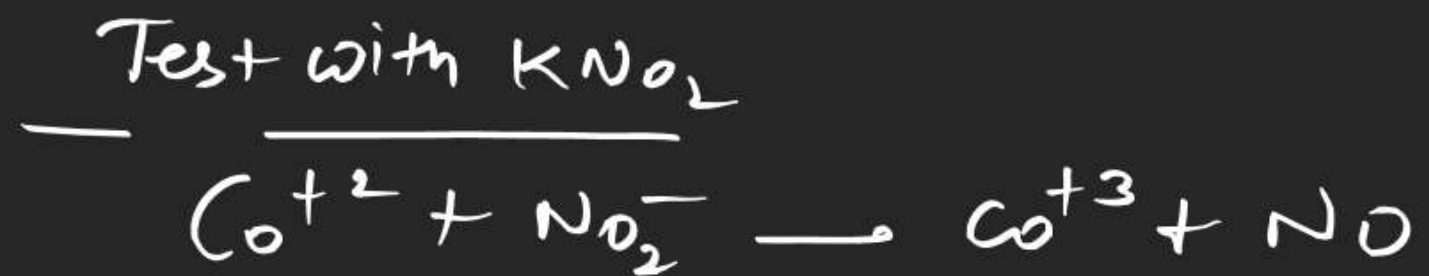






$\text{NiS} \Rightarrow$  Soluble in aqua regia.



Test with  $\text{KNO}_2$ 



<https://t.me/VJSIROfficial>

V group

	$\text{Ba}^{+2}$	$\text{Sr}^{+2}$	$\text{Ca}^{+2}$
$(\text{NH}_4)_2\text{CrO}_4$	$\text{BaCrO}_4$ yellow ppt	x	x
$(\text{NH}_4)_2\text{SO}_4$ (excess)	$\text{BaSO}_4$ white	$\text{SrSO}_4$ white ppt	x
$(\text{NH}_4)_2\text{C}_2\text{O}_4$	$\text{BaC}_2\text{O}_4$ white	$\text{SrC}_2\text{O}_4$ white	$\text{CaC}_2\text{O}_4$ white ppt

