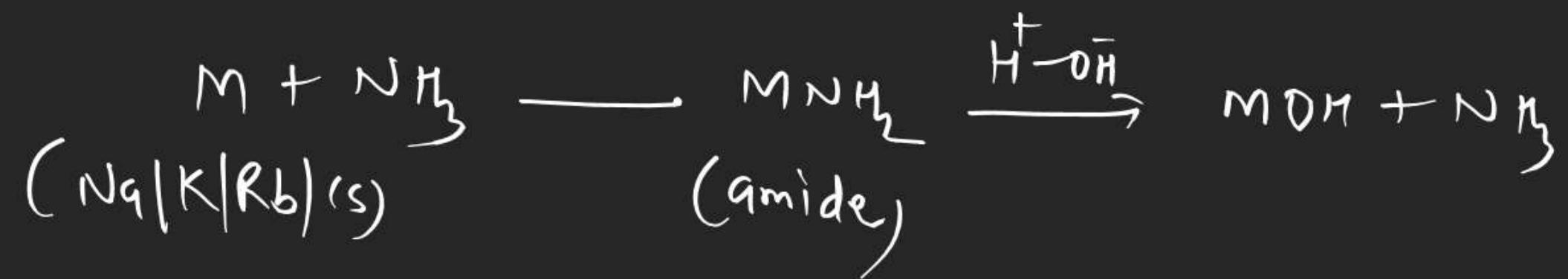
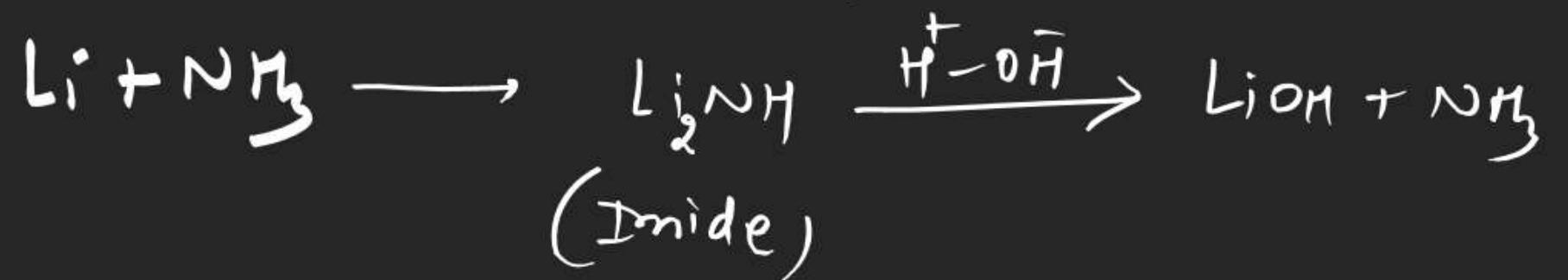


Reaction with $\text{NH}_3(s)$



 $\perp \text{F}$

$$\text{Li}^+ \quad \text{PCl}_5$$

$\text{Nat} \quad \rho - \langle 1(\text{axial}) \rangle \rho - \langle 1(\text{eq.}) \rangle$

 K^+ Rb^+ Cs^+

$$\phi = \frac{\text{charge}}{\text{size}}$$

$$\phi / \text{size} \uparrow$$

Reaction with liq. NH_3



Ammoniated
cation

Ammoniated e^-
Paragon

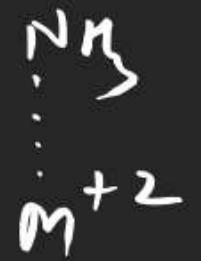
Conductor

S.R.A (Strong Reducing
agent)
Blue colour

On standing it liberate hydrogen so it becomes
in amide solution but if catalytic impurities
absent $[Fe | Zn | Pt]$ then they are
stable.

If conc. solution of alkali metal in LiCl-NH_3
then paramagnetic behavior decreases and
solution becomes diamag. and
blue colour changes to bronze.

On boiling this solution metal can be recovered
in case of alkali metal
but in case of alkaline earth metal
ammoniates can be recovered.



Ammoniates

Be and Mg → Can not form such solution
with Li^+ , NH_3
due to High I_E

flame test

due to low I·E these metal show colour in flame

Note ⇒ Be and mg

do not show flame test

due to high I·E

L = Carmine Red | Crimson Red

Na = Golden yellow

K = Lilac (Pale violet)

Rb = Reddish violet

Cs = Blue

Ca = Brick Red

Sr = Crimson Red

Ba = Apple green

II ABe
MgCa
SrBa
Ra

$$\text{① Conf} = ns^2$$

② Atomic size ↑ down the group

③ I.E ↓

$$\boxed{\text{Be} > \text{Mg} > (\text{Ca})\text{Sr} > \text{Ra} > \text{Ba}}$$

due to poor S.E
of half shell

$$D = \frac{M}{V} \uparrow$$

$D \uparrow$

$$B_e > mg > (g < s_r < B_g)$$

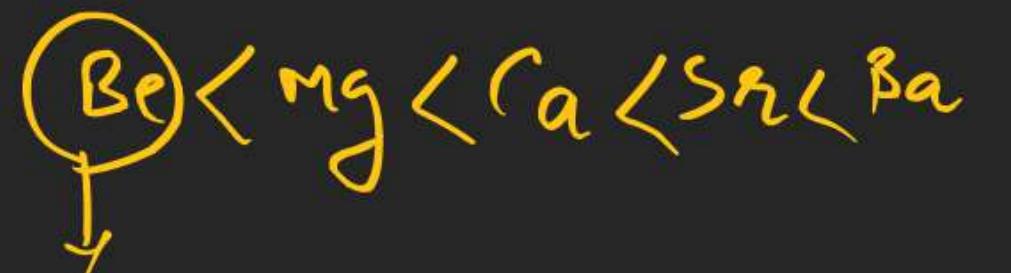
$\gg\ll$

$M \cdot P \downarrow$

$$B_e > mg < (g) > s_r > B_g$$

$$B \cdot P \downarrow \quad B_e > mg < (g) > s_r < B_g$$

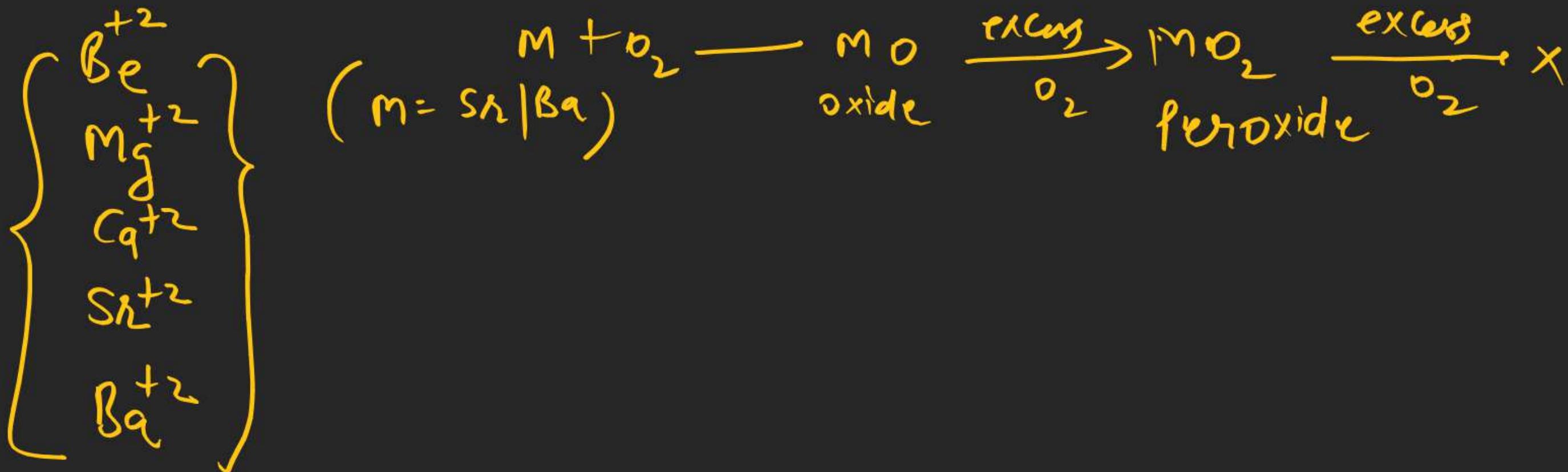
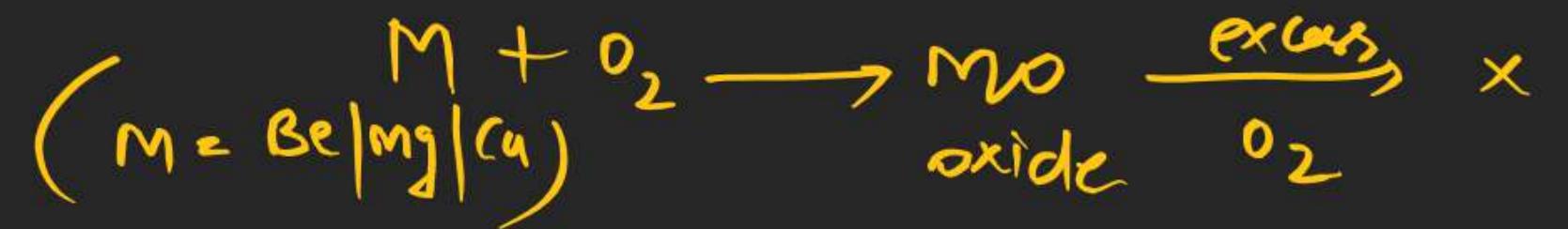
Reducing power



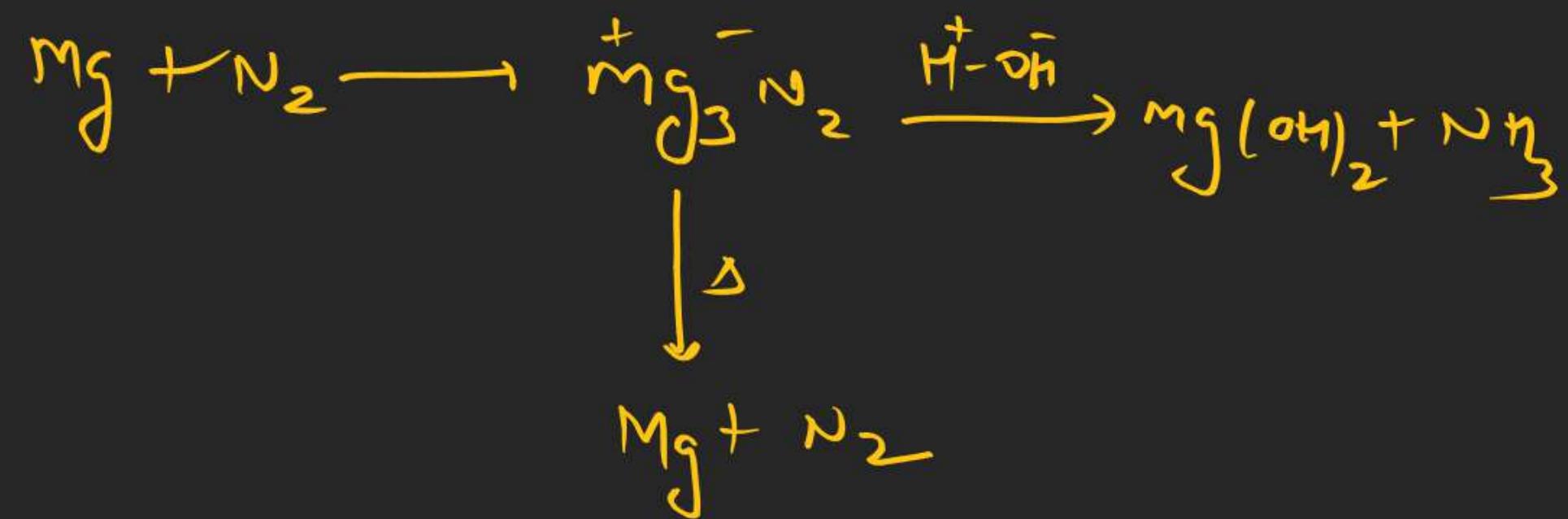
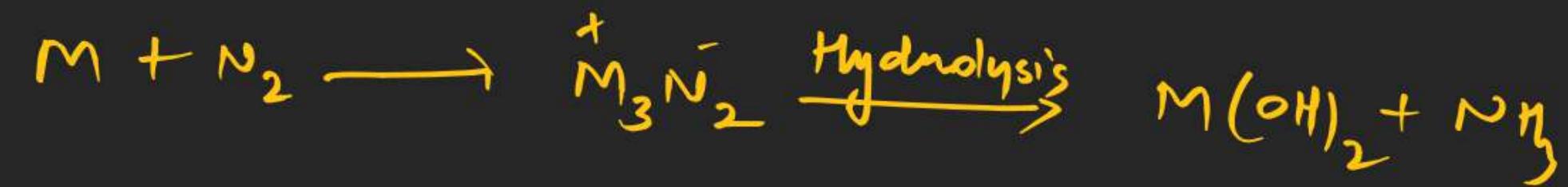
W.R.A
(Weak Reducing agent)

Chemical Reaction

Reaction with O₂



Reaction with N_2



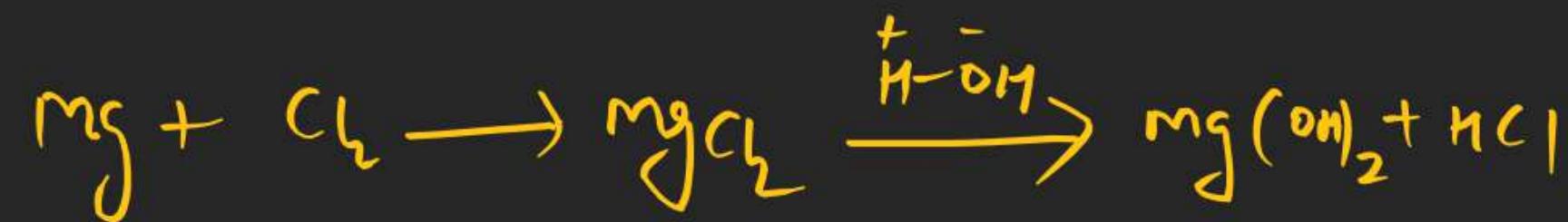
Reaction with H₂



Note \Rightarrow BeH₂ does not form directly



Reaction with Halogen



Note \rightarrow $BeCl_2$ does not form directly



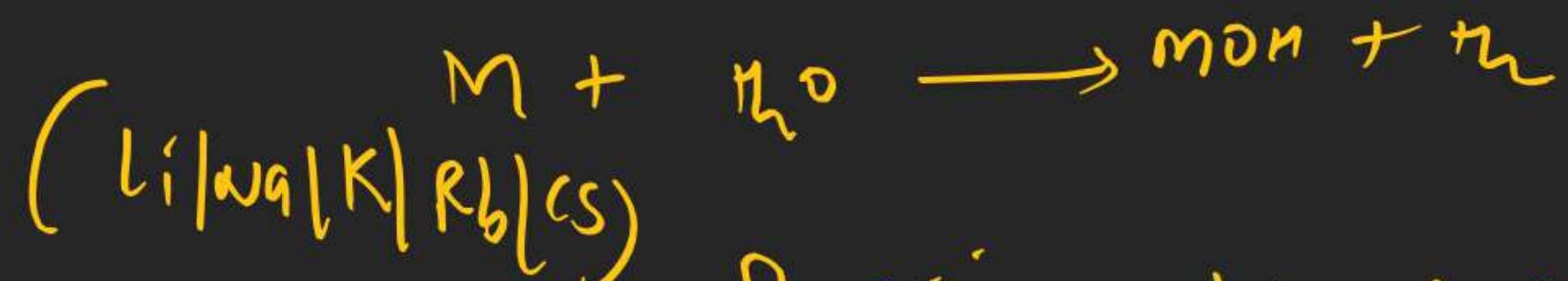
Reaction with H_2O



order of reactivity



but alkali metals reaction with water



Order of Reactivity



Li = react gently with water

Na = vigorously with water

K | Rb | Cs \Rightarrow violently with water

Note \Rightarrow alkaline earth metal
gen. Hydrated.



On Heating $\text{BeCl}_2 \cdot 6\text{H}_2\text{O}$
 $\text{MgCl}_2 \cdot 6\text{H}_2\text{O}$ } undergoes in hydrolysis
 $\text{CaCl}_2 \cdot 6\text{H}_2\text{O}$ } so do not get anhydrous

$\text{SrCl}_2 \cdot 6\text{H}_2\text{O}$ and $\text{BaCl}_2 \cdot 2\text{H}_2\text{O}$ — On Heating, we get
anhydrous.