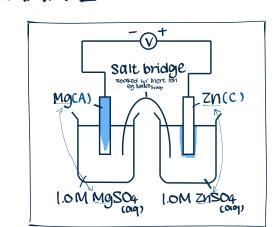
imple chemical cells: examples (2 electroly

Metal-metal ion cells

EXAMPLE



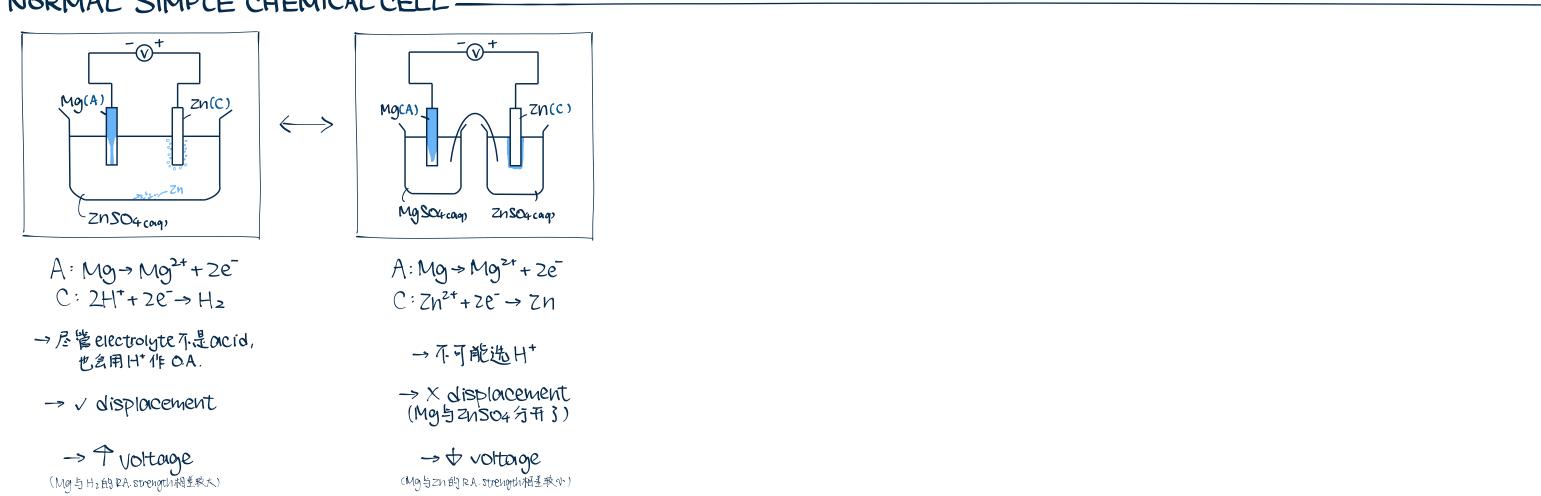
Metal-metal (on cell = 2 x metal-metal ion half cell + 1 x salt bridge

C: Zh²+2e-→ Zn → 两个Soln分开,

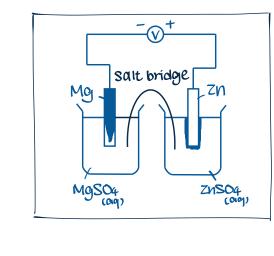
A: Moy→Moy²+2e electrode=metal, electrolyte=那种编码的 ⇒和 Cout. 類 An
→ 不可能选 H* 为 O.A.

⇒肥Cot搜An

VS NORMAL SIMPLE CHEMICAL CELL



SALT BRIDGE



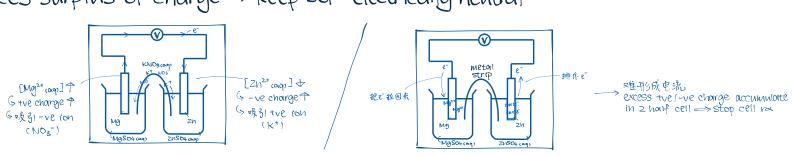
What is it?

- Strip of filter paper sociked w/ sorturated soln of salt

Uses

- provides complete circuit

- balances surplus of charge -> keep soln electrically neutral



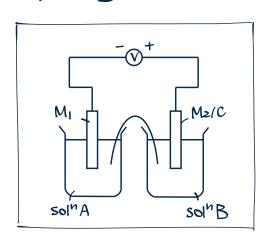
- prevents direct mixing of soln
 - direct mixing -> mixed molecules have stronger VDW force /. them (ie enthalpy +)
 - → release heat
 - ⇒ soln: loses heart
 - ⇒ chemical energy + ⇒ produced electrical energy +
 - ⇒ voltage +

Choice of ion in salt bridge

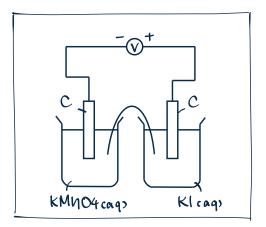
- inertions (does not react w/ substances in half cells/ become O.A., R.A.)
 - > can coloured (ons be used? - No
 - coloured ions are reactive
- no ppt reactions
 - > insoluble precipitate -> clogs passage of ion -> incomplete circuit
 - > zn/mg cell -> can KOH, NoiOH be used?
 - NO. Zn2+ 20H- → Zn(OH)2, Mg2+ 20H- → Mg(OH)2
 - > Zn/Pb cell -> can KzSO4 be used?
 - No. $Pb^{24} + S04^{2-} \Rightarrow PbS04$

2 Examples (2 electrolyte)

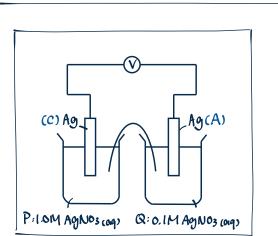
EXAMPLES



- If O.A. is found in soln B/ @ reading is the
 - \rightarrow R.A. Strength: $M_1 > M_2 / M_1 > C$
- ☆Soln A,B不能放Hzo
- → mobile ions浓度太低,不通电



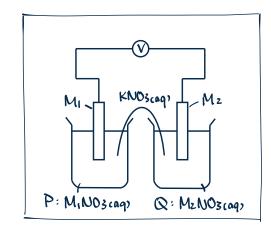
- C:5e-+8H++MNO4- -> MN2+ + 4H2D
- A: 21 -> 1z + 2e
- 力 永远最后才参属.H⁺为 o.A. (OH⁻ 不用参慮)



- T. P: 1.0M Agting, gains et more readily than Q: O.IM Agtage
- : undergoes reduction -> Ag
- $C(P):Ag^{\dagger}+e^{-} \rightarrow Ag$ $A(Q):Ag \rightarrow Ag + e^{-}$

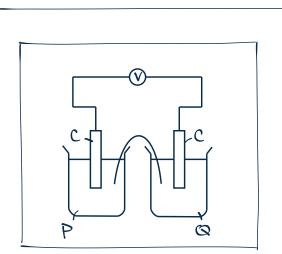
=> ra stops => Ø:OV

AS CEll ra Continue, P: [Agtagr] +, Q: [Agtagr] + finally: PLAgt cogs] = QLAgt cogs]



Given P: [Ktag] T, which metal is stronger R.A.?

- P:[K+caq,]↑ ve soln (李来负极,所以吸引K+ion)
- → Q: tue soln → At Q: M2 → M2 + e
- \Rightarrow R.A. strength: $Mz > M_1$



- 1.0140 cm3 KX (aq)
- P: 1.0M 40 cm3 Xz (ag) mixed w/ Q: 0.8 M 50 cm3 Yz cags mixed w/ 0.8M 50cm3 KY cag,
- Given: resulting [x cogs] = 0.7M, which halogen is stronger 0.A.?
- Original [X-caq,] = $\frac{1.0}{2}$ = 0.5M < 0.7M \Longrightarrow [X-caq,] \uparrow
- \Rightarrow $\chi_z + 2e^- \rightarrow 2\chi^-$, χ_z gains e^- more readity, undergoes reduction $\Rightarrow \chi^-$
- ... X2 is stronger o.A.

Find resulting [Y caq,]

- $\chi_2 + 2 \Upsilon \rightarrow 2 \chi^- + \Upsilon_2$ $+ 0.016 \text{ Mol} \Upsilon \rightarrow 2 \chi^- + \Upsilon_2$
- $M = \frac{mol}{V} \leftarrow = \pm \frac{0.016}{0.1} M$ = $\pm 0.2 \times 0.08 mol$ $\rightarrow mol = M \times V$ = +0.16M = 70.016 mol
 - =0.4M-0.16M
- :. [Y (ag)] = 0.24M