

$$\frac{Volt}{i} = \frac{Joule}{Coul}$$

$$1F = \frac{96500 \text{ Coul}}{\text{mole } e^-}$$

ex: $\frac{1 \text{ mole } Ag}{1 \text{ mole } e^-}$
 $\frac{1 \text{ mole } Ag}{2 \text{ mole } e^-}$

* $\frac{Amp}{i} = \frac{Coul}{Sec}$ *

$\frac{M}{i} = \frac{\text{Moles}}{p}$

Mar 31-7:40 AM

Calc #g Al hour electrolysis Al_2O_3 , 10Amps

~~$\frac{1 \text{ mole } Al}{3 \text{ mole } e^-}$~~

~~$\frac{96500 \text{ Coul}}{\text{mole } e^-}$~~

~~$\frac{10 \text{ Coul}}{Sec}$~~

~~$\frac{1 \text{ hr } (60 \text{ min}) (60 \text{ sec})}{1 \text{ hr } (60 \text{ min})} = 3600 \text{ sec}$~~

~~$\frac{1 \text{ mole } Al}{27 \text{ g } Al}$~~

1 mole Al	3 mole e⁻	96500 Coul	10 Coul	3600 sec
27 g Al	1 mole Al	1 mole e⁻	10 Coul	3600 sec

Mar 31-8:03 AM

$Mg^{+2} + 2e^{-} \rightarrow Mg^0$

60 Amps $4 \times 10^3 \text{ sec}$

$MgCl_2$ $\#g?$ $\frac{60 \text{ cal}}{\text{sec}}$

$\frac{1 \text{ mole Mg}}{24g \text{ Mg}}$

24g Mg	1 mole Mg	1 mole e ⁻	60 cal	$4 \times 10^3 \text{ sec}$
1 mole Mg	2 mole e ⁻	96500 cal	1 sec	

Mar 31-8:10 AM

$Mg^{+2} + 2e^{-} \rightarrow Mg^0$

$MgCl_2$? sec Made 50g Mg , 100 Amps

$\frac{1 \text{ mole Mg}}{24g \text{ Mg}}$ $\frac{1 \text{ mole Mg}}{2 \text{ mole e}^{-}}$ $\frac{100 \text{ cal}}{\text{sec}}$

1 sec	96500 cal	2 mole e ⁻	1 mole Mg	50g Mg	=
100 cal	1 mole e⁻	1 mole Mg	24g Mg		

Mar 31-8:15 AM

Work - energy (J) or (kT)

$$\Delta G = - n F E \leftarrow \text{volts}$$

$$J = \frac{\text{Mole } e^-}{1} * \frac{\text{Coul}}{\text{Mole } e^-} * \frac{J}{\text{Coul}}$$

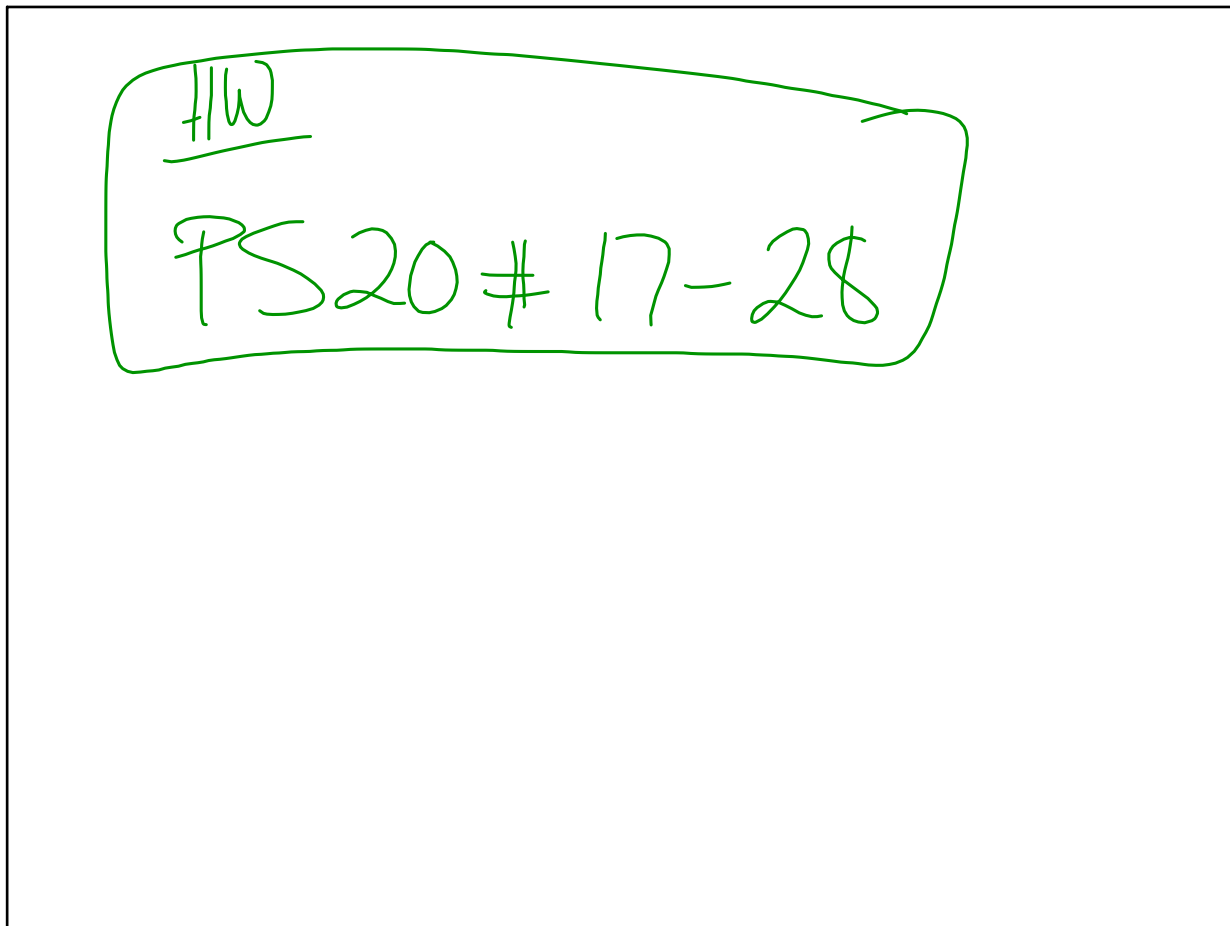
Mar 31-8:20 AM

Zn(s) / Zn²⁺ || Cu²⁺ / Cu(s)
1 × 10⁻⁵ M
 LEO Salt Bridge GER

$$\text{Zn} \rightarrow \text{Zn}^{2+} + 2e^-$$

$$\text{Cu}^{2+} + 2e^- \rightarrow \text{Cu}^0$$

Mar 31-8:24 AM



Mar 31-8:27 AM