Nernstova rovnice: - potenciál kovové elektrody ponořené do roztoku téhož kovu

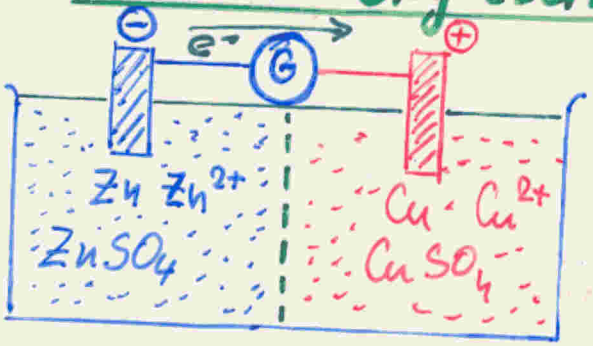
$$E = E^\circ + \frac{0{,}059}{n} \log \frac{a(A_{ox})}{a(A_{red})} = E^\circ + \frac{0{,}059}{n} \log a(A_{ox})$$

A_{red} - tuhá fáze - kovová elektroda, $a(A_{red}) = 1$.
$a(A_{red})$ - zahrnuta do standardního red. potenciálu

$$M^{n+} + ne^- \rightarrow M$$

$$E = E^\circ + \frac{0{,}059}{n} \cdot \log [M^{n+}] = E^\circ + \frac{0{,}059}{n} \log c_M$$

Galvanický článek



$$Zn + Cu^{2+} \rightleftharpoons Cu + Zn^{2+}$$

$Zn^{2+} + 2e \rightarrow Zn \quad E^\circ = -0{,}76V$ redukční
$Cu^{2+} + 2e \rightarrow Cu \quad E^\circ = +0{,}34V$ oxidační

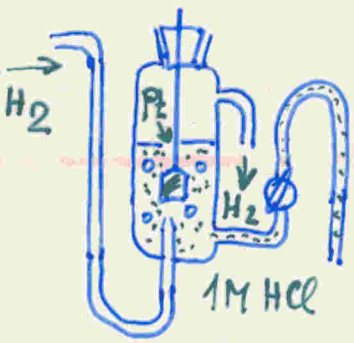
$$E = EMS = E_{Cu} - E_{Zn} = +0{,}34 - (-0{,}76)V$$

$EMS = 1{,}10V$

$Mn^{2+} + 2e \rightleftharpoons Mn \quad E^\circ = -1{,}03V$ red.
$Zn^{2+} + 2e \rightleftharpoons Zn \quad E^\circ = -0{,}76V$ ox.
$EMS = E_{Zn} - E_{Cu} = -0{,}76 - (-1{,}03)$
$EMS = +0{,}27V$

Elektrochemická řada napětí

Standard - vodíková elektroda



	$E^\circ(V)$
Li^+/Li	-3,05
K^+/K	-2,93
Ba^{2+}/Ba	-2,90
Sr^{2+}/Sr	-2,89

$Ca, Na, Mg, Al, Mn,$
$Zn, Cr^{3+}, Fe^{2+}, Cd,$
$Tl^+, Co^{2+}, Ni^{2+}, Sn^{2+},$
$Pb^{2+}, H_2, Cu^{2+}, Ag^+,$
$Hg^{2+}, Pd^{2+}, Au^{3+}$ (+1,5)

$$E_{Zn} = E^\circ_{Zn} + \frac{0{,}059}{2} \log c_{Zn}$$

$$E_{Cu} = E^\circ_{Cu} + \frac{0{,}059}{2} \log c_{Cu}$$

$$E = E^\circ_{Cu} - E^\circ_{Zn} + \frac{0{,}059}{2} \log \frac{c_{Cu}}{c_{Zn}}$$