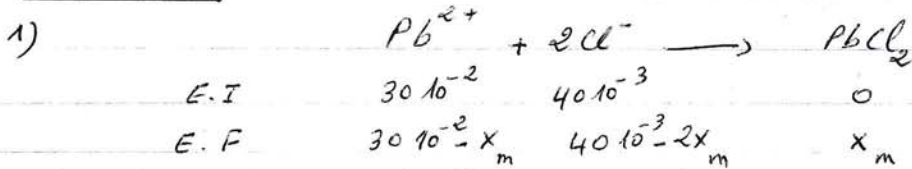


Correction DS chimie

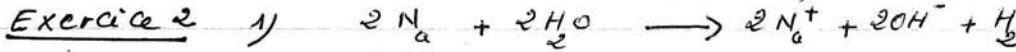
Exercice 1 :



2° Le réactif limitant est le réactif totalement consommé par la réaction

3° Si Pb^{2+} est limitant $\Rightarrow x_{1\text{max}} = 30 \cdot 10^{-2} \text{ mol} \Rightarrow n(\text{Cl}^-) = -20 \cdot 10^{-3} \text{ mol} < 0$ incorrect \Rightarrow le limitant Cl^-

4° E.F. $x_{m2} = 20 \cdot 10^{-3} \text{ mol} \Rightarrow n(\text{Cl}^-) = 0 \text{ mol} \quad n(\text{Pb}^{2+}) = 10^{-2} \text{ mol} \quad n(\text{PbCl}_2) = 20 \cdot 10^{-3} \text{ mol}$

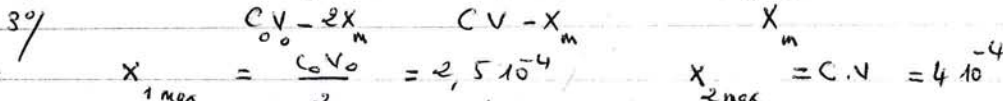
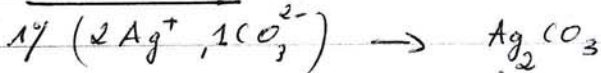


3° $n(\text{H}_2\text{O}) = 55,5 - 2 \cdot 5 \cdot 10^{-3} \approx 55,5 \text{ mol} \Rightarrow$ le volume d'eau reste constant 1 l.

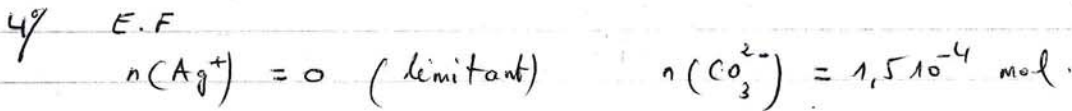
5° $V(\text{H}_2) = n(\text{H}_2) \cdot V_m = 5 \cdot 10^{-3} \cdot 22,4 = 0,112 \text{ l}$

6° $[\text{Na}^+] = [\text{OH}^-] = \frac{2x_m}{1} = 10^{-2} \text{ mol/l}$

Exercice 3

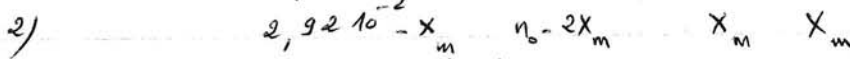
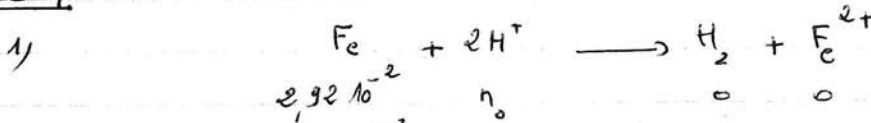


$x_{1\text{max}} \neq x_{2\text{max}} \Rightarrow$ le mélange n'est pas stœchiométrique.



5° Dans les conditions stœchiométriques: $x_{1\text{max}} = x_{2\text{max}} \Rightarrow \frac{c_1 V_1}{2} = c_2 V_2$
 $\Rightarrow V = \frac{2,5 \cdot 10^{-4}}{0,2} = 1,25 \cdot 10^{-3} \text{ l}$

Exercice 4 :



Le réactif limitant est Fe .

$V(\text{H}_2) = 2,92 \cdot 10^{-2} \cdot 22,4 = 0,513 \text{ l}$

3° $[\text{Fe}^{2+}] = \frac{2,92 \cdot 10^{-2}}{50 \cdot 10^{-3}} = 0,458 \text{ mol/l}$

Exercice 1

5/ $m(\text{PbCl}_2) = n \cdot M = 20 \cdot 10^{-3} \cdot (278,2) = 5,56 \text{ g}$