

analysis

May 13, 2023

1 Modules

```
[ ]: import pandas as pd
```

2 Data

```
[ ]: calcium_hydroxide = pd.read_csv("calcium_hydroxide.txt")
     comun_ion = pd.read_csv("comun_ion.txt")
```

```
[ ]: calcium_hydroxide
```

```
[ ]:      Ca(OH)2(mL)  VHCl(mL)
     0             25        7.3
     1             25        6.9
```

```
[ ]: comun_ion
```

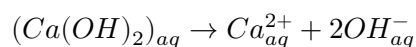
```
[ ]:      Ca(OH)2(mL)  VCaCl2(mL)  VHCl(mL)
     0             25           5        7.0
     1             25           5        6.8
```

3 Valoration $Ca(OH)_2$

```
[ ]: mols_calcium_hydroxide = calcium_hydroxide["VHCl(mL)"]*1e-3*0.1*(1/2)
     M_calcium_hydroxide = mols_calcium_hydroxide/
     ↪(calcium_hydroxide["Ca(OH)2(mL)"]*1e-3)
     mean_M_calcium_hydroxide = round( M_calcium_hydroxide.mean() , 2 )
     "The concetration of the calcium-hydroxide is "+ str(mean_M_calcium_hydroxide)
     ↪+ "M"
```

```
[ ]: 'The concetration of the calcium-hydroxide is 0.01M'
```

4 K_{ps} $Ca(OH)_2$



$$K_{ps} = [Ca^{2+}][OH^{-}]^2 = \frac{[OH^{-}]}{2}[OH^{-}]^2 = \frac{[OH^{-}]^3}{2}$$

$$[Ca^{2+}] = \frac{[OH^{-}]}{2}$$

```
[ ]: M_OH = 2*mean_M_calcium_hydroxide
Kps = round( ( M_OH**3 )/2 , 6 )
"The Kps of the calcium hydroxide is " + str(Kps)
```

```
[ ]: 'The Kps of the calcium hydroxide is 4e-06'
```