

analysis

May 8, 2023

1 Modules

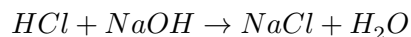
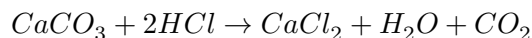
```
[ ]: import pandas as pd
```

2 Data

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

```
[ ]:      m(g)  VHCl(mL)  VNaOH(mL)
0     0.1      20      6.7
1     0.1      20      7.2
```

3 Retrotitulation



```
[ ]: total_mols_HCl = (data["VHCl(mL)"]*0.1)/1000
excess_mols_HCl = (data["VNaOH(mL)"]*0.1)/1000
reactants_mols_HCl = total_mols_HCl - excess_mols_HCl
mols_CaCO3 = reactants_mols_HCl *(1/2)
m_CaCO3 = mols_CaCO3* 100
mean_m_CaCO3 = round( m_CaCO3.mean(),3)
std_m_CaCO3 = round(m_CaCO3.std(),3)

mean_concetration = round( ( mean_m_CaCO3 / 0.1 ) *100 )
std_concetration = round( ( std_m_CaCO3 /0.1 ) *100 )

"mass CaCO3 = (" + str(mean_m_CaCO3)+" +- "+str(std_m_CaCO3)+" ) g, " + "%_
↪concentration = (" + str(mean_concetration) + " +- " + str(std_concetration)_
↪+)"%)%"
```

```
[ ]: 'mass CaCO3 = (0.065 +- 0.002) g, % concentration = (65 +- 2)%'
```