

Name Best Data in ClassSection Chem 112-06

Experiment 4 (observe use of sig figs)

Tues pm

Data and Calculations: Determination of a Chemical FormulaAtomic masses: Copper 63.546 Cl 35.453 H 1.0079 O 15.999
(in g/mol)Mass of crucible 10.6472 gMass of crucible and hydrated sample 11.6481 gMass of hydrated sample $11.6481\text{g} - 10.6472\text{g}$ 1.0009 gMass of crucible and dehydrated sample 11.4359 gMass of dehydrated sample $11.4359\text{g} - 10.6472\text{g}$ 0.7887 gMass of empty watch glass 10.5285 gMass of watch glass and copper 10.8998 gMass of copper $10.8998\text{g} - 10.5285\text{g}$ 0.3713 gNo. moles of copper $0.3713\text{g Cu} \left(\frac{\text{mol Cu}}{63.546\text{g Cu}} \right)$ 0.005843 molesMass of water evolved $1.0009\text{g} - 0.7887\text{g}$ 0.2122 gNo. moles of water $0.2122\text{g H}_2\text{O} \left(\frac{\text{mol H}_2\text{O}}{18.0148\text{g H}_2\text{O}} \right)$ 0.01178 molesMass of chlorine in sample (by difference) 0.4174 gNo. moles of chlorine $0.4174\text{g Cl} \left(\frac{\text{mol Cl}}{35.453\text{g Cl}} \right)$ 0.01177 molesMole ratio, chlorine:copper in sample $\frac{0.01177}{0.005843}$ 2.015 :1Mole ratio, water:copper in hydrated sample $\frac{0.01178}{0.005843}$ 2.016 :1Formula of dehydrated sample (round to nearest integer) CuCl₂Formula of hydrated sample CuCl₂ · 2 H₂O

WOW!