

“Answer on Question #63583, Chemistry / General Chemistry”

1. What is the concentration of a solution made 130 grams of $\text{Cu}_3(\text{PO}_4)_2$ in 3.9 L of water?
2. What is the concentration of Copper (II) ions in the above solution?
3. What is the concentration of Phosphate ions in the above solution?

1.

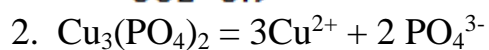
$$C = \frac{n}{V}$$

$$n = \frac{m}{M}$$

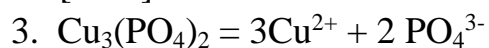
$$M(\text{Cu}_3(\text{PO}_4)_2) = 382 \text{ g/mol}$$

$$C = \frac{m}{M \cdot V}$$

$$C = \frac{130}{382 \cdot 3.9} = 0.087 \text{ mol/L}$$



$$[\text{Cu}^{2+}] = 3 \cdot 0.087 = 0.261 \text{ mol/L}$$



$$[\text{PO}_4^{3-}] = 2 \cdot 0.087 = 0.174 \text{ mol/L}$$