$Cu(NO_3)_2$ 187.54

Solutions: Preview

1. In the beaker 93.6g of $Cu(NO_3)_2$ is being dissolved in 100mL of water. Draw a rough sketch of the solution.

2. What is the molarity of the $Cu(NO_3)_2$?

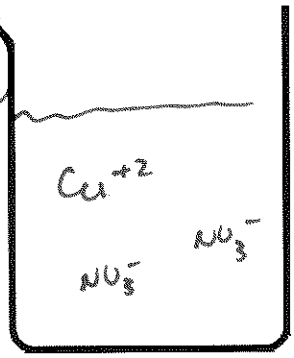
$93.6g \cdot \frac{1\ mol}{187.55} = 0.5mol$ $\quad M = \frac{mol}{L} = \frac{0.5}{0.1L} = 5M$

3. What would be the actual number of moles of NO_3^{-1} ions floating in the solution?

$5mol\ Cu(NO_3)_2 \cdot \frac{2\ NO_3^-}{1\ Cu(NO_3)_2} = 10\ mol\ NO_3^-$

4. What is the molarity of the NO_3^{-1}?

$10/1 = 10M$

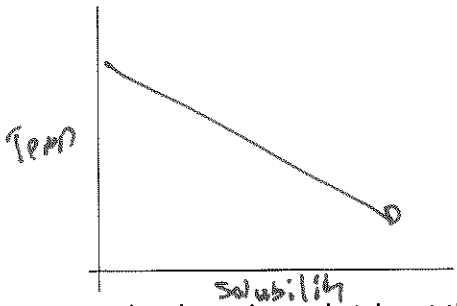


5. If you keep adding more and more $Cu(NO_3)_2$ to the solvent the solution will eventually become Saturated

6. What is the only factor that would allow you to actually add more solute per solvent?

↑ Temp

7. In the second chart sketch the relationship between a gas dissolving (molarity) and temperature. Label the axis.



↑T = ↓ Sol of gas

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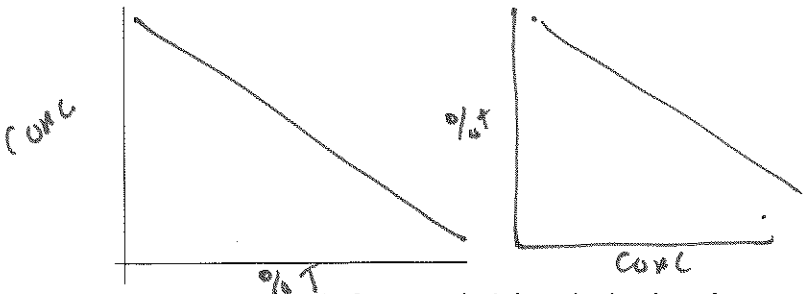
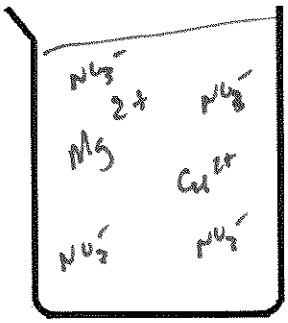
8. In the chart given, sketch out the relationship between Concentration and % T of light. Label the axis.



9. If another 100 ml of .5M $Mg(NO_3)$ to the beaker above.



a. Write out the molecular equation for this process.

$Mg(NO_3)_2 \longrightarrow Mg^{2+} + 2NO_3^-$

b. ~~Draw a picture of the aftermath.~~

c. ~~What is the concentration of the Mg^{2+} ion.~~

	Mg^{2+}	NO_3^-	Cu^{2+}	NO_3^-
Before	5M	10M	5M	10M
After	2.5M	10M	2.5M	10M

Mg^{2+} $M_1V_1 = M_2V_2$

$5 \cdot 100 = x \cdot 200 \quad x = 2.5$

NO_3^- $mol = M \cdot L$ $\quad 10M \cdot .1L = 1mol$ $\quad 10M \cdot .1L = 1mol$ > Both Beakers equal

additional $M = \frac{2\ mol}{.2L} = 10M$