# Visualizing Molarity and Concentrations

- Saturated – when no more solute will dissolve in solvent. In solutions we are usually saying that no more of the solid will dissolve in the liquid. Anymore that you adds will not dissolve and sink to the bottom of the container.

**Activity** – go to www.phet.colorado.edu/en.simulation.molarity and download the simulation.

1.) Show your calculations in finding the molarity or molar concentration for each of the following solutions when *it becomes saturated*.

a.) Cobalt (II) chloride

$\frac{1.00\ mol}{0.23\ L} = 4.3\ M$

b.) Gold (III) chloride

$\frac{1.00\ mol}{0.44\ L} = 2.3\ M$

c.) Copper (II) sulphate

$\frac{1.00\ mol}{0.71\ L} = 1.4\ M$

d.) Potassium dichromate

$\frac{0.51\ mol}{1.00\ L} = 0.51\ M$

e.) Potassium chromate

$\frac{1.00\ mol}{0.29\ L} = 3.4\ M$

f.) Potassium permanganate

$\frac{0.50\ mol}{0.99\ L} = 0.50\ M$

2.) With $0.50\ L$ of solvent, how many grams would be required to make a *saturated* solution of each of the above? Show all work!

a.) $0.50\ L \times \frac{4.3\ mol}{1\ L} \times \frac{129.83\ g}{1\ mol} = 280\ g\ CoCl_2$

b.) $0.50\ L \times \frac{2.3\ mol}{1\ L} \times \frac{303.32\ g}{1\ mol} = 340\ g\ AuCl_3$

c.) $0.50\ L \times \frac{1.4\ mol}{1\ L} \times \frac{159.61\ g}{1\ mol} = 110\ g\ CuSO_4$

d.) $0.50\ L \times \frac{0.51\ mol}{1\ L} \times \frac{294.20\ g}{1\ mol} = 75\ g\ K_2Cr_2O_7$

e.) $0.50\ L \times \frac{3.4\ mol}{1\ L} \times \frac{194.20\ g}{1\ mol} = 330\ g\ K_2CrO_4$

f.) $0.50\ L \times \frac{0.51\ mol}{1\ L} \times \frac{158.04\ g}{1\ mol} = 40.\ g\ KMnO_4$