

## Water Practice – Ch. 13

### NAMING HYDRATES

Name the following compounds as hydrates:

- |  |  |
|--|--|
| 1) $\text{K}_2\text{SO}_4 \cdot 3\text{H}_2\text{O}$ | 3) $\text{CuSO}_3 \cdot 7\text{H}_2\text{O}$           |
| 2) $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$         | 4) $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$ |
- 

### MOLARITY

Calculate the molarity ( $M = \text{mol/L}$ ) of the following:

- 0.612 mol of  $\text{BaCl}_2$  dissolved to make 250 mL of solution
- 4.50 g of  $\text{NaNO}_3$ , 3.00 L
- 0.379 mol potassium bromide, 20. L
- 10.66 g of calcium fluoride, 732 mL solution

Calculate the number of grams needed to make the following:

500. mL of a 0.10 M solution of  $\text{H}_2\text{SO}_4$
  - 625 mL of a 3.00 M solution of  $\text{MgCl}_2$
  - 4.0 L of 12 M  $\text{HCl}$
  100. mL of 0.567 M  $\text{KSCN}$
- 

### Solutions and Suspensions

- Would the following pairs of substances make a solution or a suspension?
- Explain.

(HINT: Remember, "Like Dissolves Like." Ionic and polar substances will dissolve in one another, and nonpolar substances will dissolve in one another).

- $\text{NaCl}$  and oil
- wax and oil
- water and  $\text{H}_2\text{SO}_4$
- vinegar (acetic acid) and oil
- lighter fluid (butane,  $\text{C}_4\text{H}_{10}$ ) and benzene ( $\text{C}_6\text{H}_6$ )
- $\text{BaBr}_2$  and water
- rubbing alcohol and oil
- nitrogen gas ( $\text{N}_2$ ) and oxygen gas ( $\text{O}_2$ )