

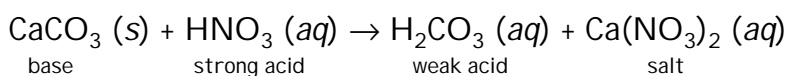
Announcements – 9/29/00

- Yes, there are assigned problems in Chapter 10!
- Yes, we have a quiz today!
- *Maybe* we will have a demo today?
- if not today, then next week for sure

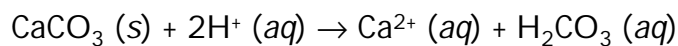
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Acid/Base? Solubility? Both!

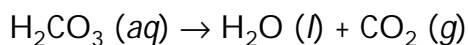
■ Calcium Carbonate + Nitric Acid



Net Ionic:



But, also:



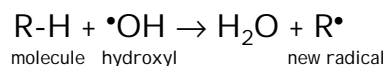
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Radicals Beget Radicals

- **Radical:** chemical species containing an *unpaired* electron

Example: atomic Cl - 7 electrons (1 unpaired)

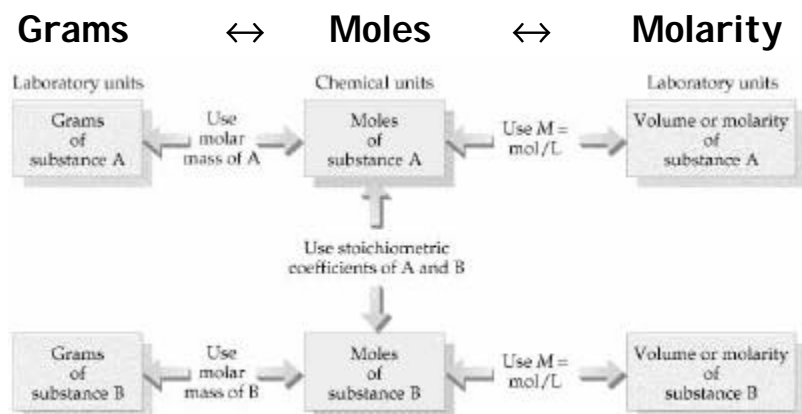
-Radicals are VERY reactive and will aggressively seek out another atom to pair up the electron and form a covalent bond:



-leads to: *chain reactions*

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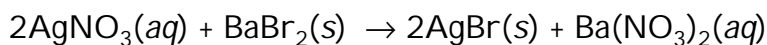
Solution Stoichiometry



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Example Problems

- What *volume* of 0.100 M AgNO₃ will precipitate all of the Br in a 2.000-g sample of BaBr₂?



grams BaBr₂ → *mol* BaBr₂ → *mol* AgNO₃ → *L* AgNO₃ → *mL* AgNO₃

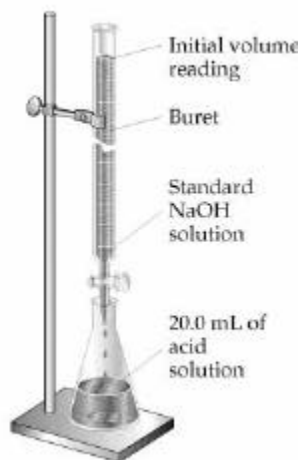
$$\begin{aligned} 2.000 \text{ g BaBr}_2 \times \frac{1 \text{ mol BaBr}_2}{297.16 \text{ g BaBr}_2} \times \frac{2 \text{ mol AgNO}_3}{1 \text{ mol BaBr}_2} \times \frac{1 \text{ L AgNO}_3}{0.100 \text{ mol AgNO}_3} \times \frac{1000 \text{ mL}}{1 \text{ L}} &= \\ &= 1.346076 \times 10^2 \text{ mL AgNO}_3 \text{ soln} \\ &= \underline{\underline{1.35 \times 10^2 \text{ mL AgNO}_3 \text{ soln}}} \end{aligned}$$

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Titration

- Quantitative reactions performed so as to reach *stoichiometric equivalence* at a determinable endpoint

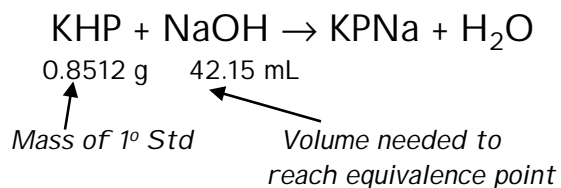
HOW?



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Titration: Example

1. Standardization of NaOH solution



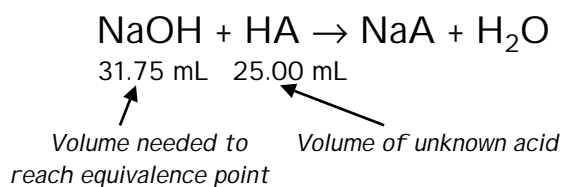
What's the concentration of the NaOH solution?

$$\frac{0.8512 \text{ g KHP}}{0.04215 \text{ L NaOH}} \times \frac{1 \text{ mol KHP}}{204.23 \text{ g KHP}} \times \frac{1 \text{ mol NaOH}}{1 \text{ mol KHP}} = \mathbf{0.09888 \text{ M NaOH}}$$

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Titration: Example (cont'd)

2. Titration of Sample



What's the concentration of the acid solution?

$$\frac{31.75 \text{ mL NaOH}}{25.00 \text{ mL HA}} \times \frac{0.0988814 \text{ mol NaOH}}{\text{L}} \times \frac{1 \text{ mol HA}}{1 \text{ mol NaOH}} = \mathbf{0.1256 \text{ M HA}}$$

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