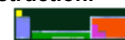


Revised August 2012



HONORS WORKSHEET 5c: ANSWERS

- Electrolyte, soluble ionic compound produces lots of ions in solution
 - Non-electrolyte, molecular (covalent) compound that produces no ions in solution
 - Electrolyte, soluble ionic compound produces lots of ions in solution
- $\text{CaSO}_{4(aq)} + \text{K}_2\text{CO}_{3(aq)} \rightarrow \text{CaCO}_{3(s)} + \text{K}_2\text{SO}_{4(aq)}$
 $\text{Ca}^{2+}_{(aq)} + \text{CO}_3^{2-}_{(aq)} \rightarrow \text{CaCO}_{3(s)}$
 - NO REACTION, all potential products are soluble
 - $\text{AgNO}_{3(aq)} + \text{KCl}_{(aq)} \rightarrow \text{KNO}_{3(aq)} + \text{AgCl}_{(s)}$
 $\text{Ag}^{+}_{(aq)} + \text{Cl}^{-}_{(aq)} \rightarrow \text{AgCl}_{(s)}$
- $\text{LiOH}_{(aq)} + \text{HNO}_{3(aq)} \rightarrow \text{LiNO}_{3(aq)} + \text{H}_2\text{O}_{(l)}$
 - $\text{Li}^{+}_{(aq)} + \text{OH}^{-}_{(aq)} + \text{H}^{+}_{(aq)} + \text{NO}_3^{-} \rightarrow \text{Li}^{+}_{(aq)} + \text{NO}_3^{-}_{(aq)} + \text{H}_2\text{O}_{(l)}$
 - $\text{H}^{+}_{(aq)} + \text{OH}^{-}_{(aq)} \rightarrow \text{H}_2\text{O}_{(l)}$
- +1, group 1 always +1
 - +2, oxygen usually -2
 - $-\frac{1}{2}$, group 1 always +1
 - 3, hydrogen usually +1
- $2\text{Na} + \frac{1}{2}\text{O}_2 \rightarrow \text{Na}_2\text{O}$
 $2\text{Na} \rightarrow 2\text{Na}^{+} + 2\text{e}^{-}$
 $\frac{1}{2}\text{O}_2 + 2\text{e}^{-} \rightarrow \text{O}^{2-}$ (or all reactions doubled)
 - $\text{K} + \frac{1}{2}\text{Cl}_2 \rightarrow \text{KCl}$
 $\text{K} \rightarrow \text{K}^{+} + \text{e}^{-}$
 $\frac{1}{2}\text{Cl}_2 + \text{e}^{-} \rightarrow \text{Cl}^{-}$ (or all reactions doubled)
 - $2\text{Al} + 3\text{S} \rightarrow \text{Al}_2\text{S}_3$
 $2\text{Al} \rightarrow 2\text{Al}^{3+} + 6\text{e}^{-}$
 $3\text{S} + 6\text{e}^{-} \rightarrow 3\text{S}^{2-}$
- $\frac{1}{2}\text{Cl}_2 \rightarrow \text{Cl}^{5+} + 5\text{e}^{-}$
 $2\frac{1}{2}\text{Cl}_2 + 5\text{e}^{-} \rightarrow 5\text{Cl}^{-}$ (or all reactions doubled)
 - Yes, simultaneous oxidation and reduction of the same species
- $5\text{Fe}^{2+} + \text{MnO}_4^{-} + 8\text{H}^{+} + 5\text{e}^{-} \rightarrow 5\text{Fe}^{3+} + 5\text{e}^{-} + \text{Mn}^{2+} + 4\text{H}_2\text{O}$
 - Oxidizing agent: MnO_4^{-} ; Oxidized species: Fe^{2+}
 - Reducing agent: Fe^{2+} ; Reduced species: MnO_4^{-}
- Double displacement, precipitation
 - Double displacement, acid base
 - Redox, combustion
 - Decomposition, Redox
 - Combination, Redox
 - Single displacement, Redox