

Announcements

- Turn on the Clicker (the red LED comes on).
- Push “Join” button followed by “20” followed by the “Send” button (switches to flashing green LED if successful).

Survey of topic choices
for chapter 18.

- Make sure you get the lab handout for next week.

Review

- Voltaic Cells
- Assigning Oxidation #'s (oxidation states)
- Redox Reactions and Balancing them.
- Energetics of Redox Reactions $\Delta G = -nFE$

Rules for assigning Oxidation #s

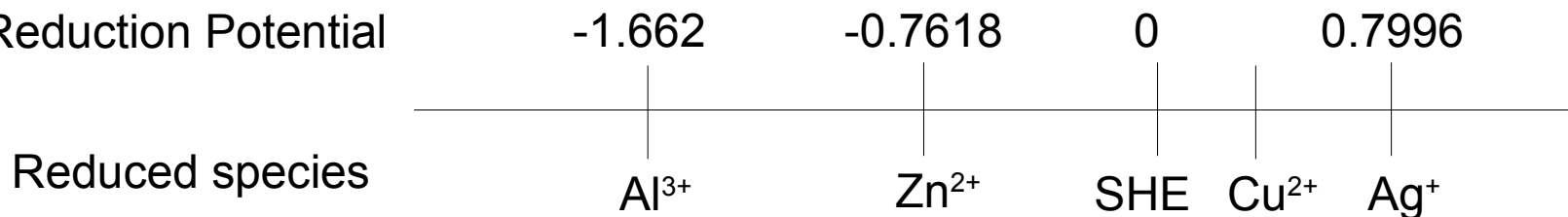
- All pure elements have an oxidation number = 0.
- O atoms in compounds usually have an oxidation number of -2, except in the case of peroxides.
- H atoms in compounds have oxid# = +1, except in metal hydrides.
- Alkali metals: +1, Alkali earths: +2, Halogens: -1 (but in oxides +1, +2....., in ClO^- , Cl is +1)
- The total of all the charges (oxid #s) on all the atoms in a molecule or ion must add up to the total charge on the species.
- Do not confuse oxid# with formal charge which is used to find the best Lewis structure.

Standard Reduction Potentials

Figure 17.10

Standard Reduction Potentials

Standard Reduction Potential



	E° (V)		E° (V)
$\text{PbO}_2(\text{s}) + \text{SO}_4^{2-} + 4\text{H}^+ + 2\text{e}^- \longrightarrow \text{PbSO}_4 + 2\text{H}_2\text{O}$	1.685	$2\text{H}^+ + 2\text{e}^- \longrightarrow \text{H}_2$	0.000
$\text{Ag}^+ + \text{e}^- \longrightarrow \text{Ag}$	0.7996	$\text{PbSO}_4(\text{s}) + 2\text{e}^- \longrightarrow \text{Pb} + \text{SO}_4^{2-}(\text{aq})$	-0.356
$\text{I}_2(\text{s}) + 2\text{e}^- \longrightarrow 2\text{I}^-(\text{aq})$	0.5355	$\text{Zn}^{2+} + 2\text{e}^- \longrightarrow \text{Zn}$	-0.7618
$\text{Cu}^{2+} + 2\text{e}^- \longrightarrow \text{Cu}$	0.3419	$\text{Al}^{3+} + 3\text{e}^- \longrightarrow \text{Al}(\text{s})$	-1.662