MEGA LECTURE

REACTIONS FOR TOPIC 6

$Ca(s) + 2H_2O(l) \rightarrow Ca(OH_2)(aq) + H_2(g)$	also Sr and Ba, with increasing reactivity
$Mg(s) + H_2O(g) \rightarrow MgO(s) + H_2(g)$	steam only
$Ba^{2+}(aq) + SO_4^{2-}(aq) \rightarrow BaSO_4(s)$	white precipitate (solubility of sulphates decreases down Group 2)
$Mg^{2+}(aq) + 2OH^-(aq) \rightarrow Mg(OH)_2(s)$	white precipitate (solubility of hydroxides increases down Group 2)
$Ca(OH)_2 + 2HCl \rightarrow CaCl_2 + 2H_2O$	$Ca(OH)_2$ neutralises acidic soil
$Mg(OH)_2 + 2HCl \rightarrow MgCl_2 + 2H_2O$	$Mg(OH)_2$ neutralises excess stomach acid
$Cl_2 + 2Br^- \rightarrow 2Cl^- + Br_2$	chlorine is a stronger OA than bromine
$Cl_2 + 2I^- \rightarrow 2Cl^- + I_2$	chlorine is a stronger OA than iodine
$Br_2 + 2I^- \rightarrow 2Br^- + I_2$	bromine is a stronger OA than iodine
$H_2SO_4 + Cl^- \rightarrow HSO_4^- + HCl$	not a redox reaction (chloride ions are not good reducing agents)
$H_2SO_4 + 2H^+ + 2Br^- \rightarrow SO_2 + Br_2 + 2H_2O$	bromide ions are better reducing agents
$H_2SO_4 + 6H^+ + 6I^- \rightarrow S + 3I_2 + 4H_2O$	iodide ions are good reducing agents
$H_2SO_4 + 8H^+ + 8I^- \rightarrow H_2S + 4I_2 + 4H_2O$	iodide ions are good reducing agents
$Ag^+(aq) + Cl^-(aq) \rightarrow AgCl(s)$	white precipitate
$Ag^+(aq) + Br^-(aq) \rightarrow AgBr(s)$	cream precipitate
$Ag^+(aq) + I^-(aq) \rightarrow AgI(s)$	yellow precipitate
$Cl_2 + 2OH^- \rightarrow Cl^- + ClO^- + H_2O$	makes bleach (disproportionation)
$Cl_2 + H_2O \rightarrow HCl + HClO$	makes chloric acid, used for treating water (disproportionation)
$Cl_2 + H_2O \rightarrow 4HCl + O_2$	In sunlight

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