Chemistry Ch 9
Wkst 9D2 Single Replacement

Key

REACTION CATEGORY	**SINGLE REPLACEMENT REACTION**
REACTION DESCRIPTION	In these reactions, a free element reacts with a compound to form another compound and release one of the elements of the original compound in the elemental state.There are two different possibilities: 1. One cation (+ ion) replaces another. 2. One anion (- ion) replaces another.
REACTION FORMAT	1. AB + C ----> CB + A 2. A + BC ----> BA + C
REACTION GUIDELINES **Assume Iron II in Eqns !!**	1. In a single replacement reaction atoms of one element replace the atoms of a second element in a compound. Whether one metal will replace another metal from a compound can be determined by the relative reactivities of the two metals. To help us determine this, an **activity series** of metals arranges metals in order of decreasing reactivity. A reactive metal will replace any metal listed below it in the activity series. 2. A nonmetal can also replace another nonmetal from a com-pound. This replacement is usually limited to the halogens (F_2, Cl_2, Br_2, and I_2). The activity of the halogens decreases as you go down the Group (17) of the periodic table.

1. $Ag + KNO_3$ -----> NR
2. $Zn + 2AgNO_3$ -----> $Zn(NO_3)_2 + 2Ag$
3. $2Al + 3H_2SO_4$-----> $Al_2(SO_4)_3 + 3H_2$
4. $Cl_2 + 2KI$ -----> $2KCl + I_2$
5. $2Li + 2H_2O$-----> $2LiOH + H_2$
6. $Cu + FeSO_4$-----> N.R.
7. $2Na + 2H_2O$-----> $2NaOH + H_2$
8. $Fe + Pb(NO_3)_2$-----> $Fe(NO_3)_2 + Pb$

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9. $Cu + H_2O \text{-----} > NR$

10. $Cu + Al_2(SO_4)_3 \text{----} > N.R.$

11. $2Al + 3Pb(NO_3)_2 \text{----} > 2Al(NO_3)_3 + 3Pb$

12. $Cl_2 + 2NaI \text{ ---} > 2NaCl + I_2$

13. $Fe + 2AgC_2H_3O_2 \text{ ---} > Fe(C_2H_3O_2)_2 + 2Ag$

14. $2Al + 3CuCl_2 \text{ ---} > 2AlCl_3 + 3Cu$

15. $Br2 + CaI2 \text{ ---} > CaBr_2 + I_2$

16. $2Al + 6HCl \text{ ---} > 2AlCl_3 + 3H_2$

17. $Mg + 2HCl \text{ ---} > MgCl_2 + H_2$

18. $Zn + H_2SO_4 \text{---} > ZnSO_4 + H_2$

19. $Fe + CuSO_4 \text{---} > FeSO_4 + Cu$

20. $Cl_2 + MgI_2 \text{ ---} > MgCl_2 + I_2$