

Please complete the following reactions by 1) predicting the products, 2) identifying the type of reaction, 3) balancing the equation and 4) finishing the word equations.

- S 1) hydrogen burned in oxygen
 $2H_2 + O_2 \rightarrow 2H_2O$
- C 2) octane, C_8H_{18} , is burned in oxygen
 $2C_8H_{18} + 25O_2 \rightarrow 16CO_2 + 18H_2O$
- SR 3) potassium metal added to cold water
 $2K + 2H_2O \rightarrow 2KOH + H_2$
- DR 4) potassium iodide added to lead(II) nitrate
 $2KI + Pb(NO_3)_2 \rightarrow 2KNO_3(aq) + PbI_2(s)$
- D 5) barium hydroxide (heated)
 $Ba(OH)_2 \rightarrow BaO + H_2O$
- DR 6) sodium sulfite combined with acetic acid
 $Na_2SO_3 + 2HC_2H_3O_2 \rightarrow 2NaC_2H_3O_2 + H_2SO_3(aq)$
Decomposes
- C 7) acetylene, C_2H_2 , is burned in oxygen
 $2C_2H_2 + 5O_2 \rightarrow 4CO_2 + 2H_2O$
- SR 8) zinc metal added to mercury(II) nitrate
 $Zn + Hg(NO_3)_2 \rightarrow Zn(NO_3)_2 + Hg$
- S 9) hydrogen gas + nitrogen gas
 $3H_2 + N_2 \rightarrow 2NH_3$
- D 10) lithium chloride (heated)
 $2LiClO_3 \rightarrow 2LiCl + 3O_2$
- S 11) sulfur burned (complete combustion)
 $ZS + 3O_2 \rightarrow 2SO_2$
Some S: $\ddot{O}::S::\ddot{O}$
- DR 12) sodium chloride added to sulfuric acid
 $2NaCl + H_2SO_4 \rightarrow Na_2SO_4(aq) + 2HCl(aq) \rightarrow NR$
- SR 13) aluminum in hydrochloric acid
 $2Al + 6HCl \rightarrow 2AlCl_3 + 3H_2$
- C 14) ethyl alcohol, C_2H_5O , is burned in oxygen
 $C_2H_5O + 3O_2 \rightarrow 2CO_2 + 3H_2O$
- DR 15) barium nitrate added to sodium oxalate
 $Ba(NO_3)_2 + Na_2C_2O_4(aq) \rightarrow BaC_2O_4 + 2NaNO_3(aq)$
some solubility in water?
- SR 16) iron filings added to copper(II) sulfate in solution
 $Fe + CuSO_4 \rightarrow FeSO_4 + Cu$
most common oxidation state of Fe? used Fe²⁺
- D 17) sodium carbonate (heated)
 $Na_2CO_3 \rightarrow Na_2O + CO_2$

D 18) electrolysis of aluminum oxide



DR 19) sodium bicarbonate added to hydrochloric acid



S 20) calcium oxide added to water



SR 21) silver metal added to copper(II) sulfate



C 22) propane, C_3H_8 , is burned in oxygen



SR 23) chlorine gas bubbled through a solution of calcium bromide



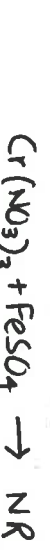
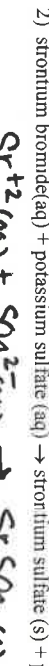
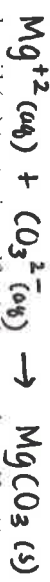
D 24) sulfuric acid heated gently



DR 25) aluminum acetate added to calcium hydroxide



Show the total ionic and net ionic forms of the following equations. If all species are spectator ions, please indicate that no reaction takes place.



Please complete the following reactions, and show the total ionic and net ionic forms of the equation:

