



## BALANCE THE GIVEN CHEMICAL EQUATIONS

### Worksheet - 15

- $C_4H_6 + \text{ \_\_\_\_\_\_ } HCl = C_4H_6Cl_2 + H_2$
- $(NH_4)_2Cr_2O_7(s) = N_2(g) + Cr_2O_3(s) + \text{ \_\_\_\_\_\_ } H_2O(g)$
- $2 I^{-} + \text{ \_\_\_\_\_\_ } NO_2^{-} + 4 H^{+} = 2 NO + I_2 + \text{ \_\_\_\_\_\_ } H_2O$
- $3 CH_4N_4O_2 + \text{ \_\_\_\_\_\_ } KClO_3 = 6 N_2 + \text{ \_\_\_\_\_\_ } H_2O + 3 CO_2 + 2 KCl$
- $2 KMNO_4 + \text{ \_\_\_\_\_\_ } Na_2SO_3 + H_2O = \text{ \_\_\_\_\_\_ } MNO_2 + 3 Na_2SO_4 + 2 KOH$
- $\text{ \_\_\_\_\_\_ } C_2H_6(g) + 7 O_2(g) = \text{ \_\_\_\_\_\_ } CO_2(g) + 6 H_2O(g)$
- $C_2H_2O + \text{ \_\_\_\_\_\_ } O_2 = 2 CO_2 + H_2O$
- $18 SiO_2NaO_2 + \text{ \_\_\_\_\_\_ } CaF_2 + 7 C_4H_{10} = 18 Si + 26 CaO + \text{ \_\_\_\_\_\_ } NaOH + 52 HF + 28 CO$
- $4 KI + \text{ \_\_\_\_\_\_ } HCl + Ca(ClO)_2 = CaCl_2 + 2 H_2O + \text{ \_\_\_\_\_\_ } I_2 + 4 KCl$
- $2 Fe(OH)_3 = Fe_2O_3 + \text{ \_\_\_\_\_\_ } H_2O$
- $2 Al + 2 H_2O + \text{ \_\_\_\_\_\_ } NaOH = 2 NaAlO_2 + \text{ \_\_\_\_\_\_ } H_2$
- $2 NaNO_3 = \text{ \_\_\_\_\_\_ } NaNO_2 + O_2$
- $\text{ \_\_\_\_\_\_ } Fe^{2+} + Cr_2O_7^{2-} + 14 H^{+} = 6 Fe^{3+} + \text{ \_\_\_\_\_\_ } Cr^{3+} + 7 H_2O$
- $FeS + \text{ \_\_\_\_\_\_ } HNO_3 = Fe(NO_3)_3 + S + \text{ \_\_\_\_\_\_ } NO_2 + 3 H_2O$
- $\text{ \_\_\_\_\_\_ } C_8H_{18}OH + 49 O_2 = 32 CO_2 + \text{ \_\_\_\_\_\_ } H_2O$
- $4 (NH_4)_3PO_4 + \text{ \_\_\_\_\_\_ } Pb(NO_3)_4 = Pb_3(PO_4)_4 + \text{ \_\_\_\_\_\_ } NH_4NO_3$
- $2 HCl + Na_2CO_3 = \text{ \_\_\_\_\_\_ } NaCl + H_2O + CO_2$
- $2 HNO_3 + Ca(OH)_2 = Ca(NO_3)_2 + \text{ \_\_\_\_\_\_ } H_2O$
- $4 KO_2 + \text{ \_\_\_\_\_\_ } H_2O = 4 KOH + \text{ \_\_\_\_\_\_ } O_2$
- $\text{ \_\_\_\_\_\_ } TiCl + Mg = MgCl_2 + \text{ \_\_\_\_\_\_ } Ti$



# ANSWERS

1.  $C_4H_6 + 2 HCl = C_4H_6Cl_2 + H_2$
2.  $(NH_4)_2Cr_2O_7(s) = N_2(g) + Cr_2O_3(s) + 4 H_2O(g)$
3.  $2 I^{-} + 2 NO_2^{-} + 4 H^{+} = 2 NO + I_2 + 2 H_2O$
4.  $3 CH_4N_4O_2 + 2 KClO_3 = 6 N_2 + 6 H_2O + 3 CO_2 + 2 KCl$
5.  $2 KMNO_4 + 3 Na_2SO_3 + H_2O = 2 MNO_2 + 3 Na_2SO_4 + 2 KOH$
6.  $2 C_2H_6(g) + 7 O_2(g) = 4 CO_2(g) + 6 H_2O(g)$
7.  $C_2H_2O + 2 O_2 = 2 CO_2 + H_2O$
8.  $18 SiO_2NaO_2 + 26 CaF_2 + 7 C_4H_{10} = 18 Si + 26 CaO + 18 NaOH + 52 HF + 28 CO$
9.  $4 KI + 4 HCl + Ca(ClO)_2 = CaCl_2 + 2 H_2O + 2 I_2 + 4 KCl$
10.  $2 Fe(OH)_3 = Fe_2O_3 + 3 H_2O$
11.  $2 Al + 2 H_2O + 2 NaOH = 2 NaAlO_2 + 3 H_2$
12.  $2 NaNO_3 = 2 NaNO_2 + O_2$
13.  $6 Fe^{2+} + Cr_2O_7^{2-} + 14 H^{+} = 6 Fe^{3+} + 2 Cr^{3+} + 7 H_2O$
14.  $FeS + 6 HNO_3 = Fe(NO_3)_3 + S + 3 NO_2 + 3 H_2O$
15.  $4 C_8H_{18}OH + 49 O_2 = 32 CO_2 + 38 H_2O$
16.  $4 (NH_4)_3PO_4 + 3 Pb(NO_3)_4 = Pb_3(PO_4)_4 + 12 NH_4NO_3$
17.  $2 HCl + Na_2CO_3 = 2 NaCl + H_2O + CO_2$
18.  $2 HNO_3 + Ca(OH)_2 = Ca(NO_3)_2 + 2 H_2O$
19.  $4 KO_2 + 2 H_2O = 4 KOH + 3 O_2$
20.  $2 TiCl + Mg = MgCl_2 + 2 Ti$



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