



BALANCE THE GIVEN CHEMICAL EQUATIONS

Worksheet - 13

1. $\text{NH}_4\text{ClO}_4 = \text{Cl}_2 + \text{O}_2 + 4 \text{H}_2\text{O} + \text{N}_2$
2. $\text{Al}_2\text{O}_3 + \text{HNO}_3 = \text{AlNO}_3 + \text{H}_2\text{O}$
3. $\text{AlN} + \text{H}_2\text{O} = \text{Al(OH)}_3 + \text{NH}_3$
4. $\text{Na}_2\text{S}_2\text{O}_3 + \text{H}_2\text{SO}_4 = \text{Na}_2\text{SO}_4 + 3 \text{H}_2\text{O} + \text{SO}_2$
5. $\text{HI} + \text{H}_2\text{SO}_4 = \text{I}_2 + \text{H}_2\text{S} + 4 \text{H}_2\text{O}$
6. $2 \text{C}_5\text{H}_{11}\text{OH} + \text{O}_2 = 12 \text{H}_2\text{O} + \text{CO}_2$
7. $\text{Na}_2\text{Cr}_2\text{O}_7 + \text{H}_2\text{SO}_4 + 3 \text{NaNO}_2 = 3 \text{NaNO}_3 + \text{Na}_2\text{SO}_4 + \text{Cr}_2(\text{SO}_4)_3 + \text{H}_2\text{O}$
8. $2 \text{AgNO}_3 + \text{K}_2\text{CrO}_4 = \text{Ag}_2\text{CrO}_4 + \text{KNO}_3$
9. $\text{C}_6\text{H}_{14} + 19 \text{O}_2 = \text{CO}_2 + 14 \text{H}_2\text{O}$
10. $\text{N}_2\text{H}_4 + \text{O}_2 = \text{H}_2\text{O} + 2 \text{N}$
11. $\text{SiO}_2\text{NaO}_2 + 85 \text{CaF}_2 + 17 \text{C}_4\text{H}_{10} + 18 \text{MnO} + 9 \text{Fe}_2\text{O}_3 = 18 \text{FeSiMn} + 85 \text{CaO} + 18 \text{Na}_2\text{C}_2 + \text{HF} + 32 \text{CO}$
12. $\text{Fe}_2\text{O}_3 + \text{Al} = \text{Fe} + \text{Al}_2\text{O}_3$
13. $\text{Mg} + \text{HCl} = \text{MgCl}_2 + \text{H}_2$
14. $\text{Ca(OH)}_2 + \text{HNO}_3 = \text{Ca(NO}_3)_2 + 2 \text{H}_2\text{O}$
15. $\text{Ca} + 12 \text{HNO}_3 = 5 \text{Ca(NO}_3)_2 + \text{N}_2 + \text{H}_2\text{O}$
16. $\text{Pb}_3\text{O}_4 + \text{HCl} = 3 \text{PbCl}_2 + \text{H}_2\text{O} + \text{Cl}_2$
17. $\text{MnO}_2 + \text{HCl} = \text{Cl}_2 + \text{MnCl}_2 + \text{H}_2\text{O}$
18. $\text{MgCO}_3 + \text{HNO}_3 = \text{Mg(NO}_3)_2 + \text{H}_2\text{O} + \text{CO}_2$
19. $5 \text{FeCl}_2 + \text{Ag}_5\text{N} = \text{Fe}_5\text{N}_2 + \text{AgCl}$
20. $14 \text{HNO}_3 + \text{Cu}_2\text{O} = 6 \text{Cu(NO}_3)_2 + \text{NO} + 7 \text{H}_2\text{O}$



ANSWERS

1. $2 \text{NH}_4\text{ClO}_4 = \text{Cl}_2 + 2 \text{O}_2 + 4 \text{H}_2\text{O} + \text{N}_2$
2. $\text{Al}_2\text{O}_3 + 2 \text{HNO}_3 = 2 \text{AlNO}_3 + \text{H}_2\text{O}$
3. $\text{AlN} + 3 \text{H}_2\text{O} = \text{Al(OH)}_3 + \text{NH}_3$
4. $\text{Na}_2\text{S}_2\text{O}_3 + 3 \text{H}_2\text{SO}_4 = \text{Na}_2\text{SO}_4 + 3 \text{H}_2\text{O} + 4 \text{SO}_2$
5. $8 \text{HI} + \text{H}_2\text{SO}_4 = 4 \text{I}_2 + \text{H}_2\text{S} + 4 \text{H}_2\text{O}$
6. $2 \text{C}_5\text{H}_{11}\text{OH} + 15 \text{O}_2 = 12 \text{H}_2\text{O} + 10 \text{CO}_2$
7. $\text{Na}_2\text{Cr}_2\text{O}_7 + 4 \text{H}_2\text{SO}_4 + 3 \text{NaNO}_2 = 3 \text{NaNO}_3 + \text{Na}_2\text{SO}_4 + \text{Cr}_2(\text{SO}_4)_3 + 4 \text{H}_2\text{O}$
8. $2 \text{AgNO}_3 + \text{K}_2\text{CrO}_4 = \text{Ag}_2\text{CrO}_4 + 2 \text{KNO}_3$
9. $2 \text{C}_6\text{H}_{14} + 19 \text{O}_2 = 12 \text{CO}_2 + 14 \text{H}_2\text{O}$
10. $\text{N}_2\text{H}_4 + \text{O}_2 = 2 \text{H}_2\text{O} + \text{N}_2$
11. $18 \text{SiO}_2\text{NaO}_2 + 85 \text{CaF}_2 + 17 \text{C}_4\text{H}_{10} + 18 \text{MnO} + 9 \text{Fe}_2\text{O}_3 = 18 \text{FeSiMn} + 85 \text{CaO} + 18 \text{NaC}_2 + 170 \text{HF} + 32 \text{CO}$
12. $\text{Fe}_2\text{O}_3 + 2 \text{Al} = 2 \text{Fe} + \text{Al}_2\text{O}_3$
13. $\text{Mg} + 2 \text{HCl} = \text{MgCl}_2 + \text{H}_2$
14. $\text{Ca(OH)}_2 + 2 \text{HNO}_3 = \text{Ca(NO}_3)_2 + 2 \text{H}_2\text{O}$
15. $5 \text{Ca} + 12 \text{HNO}_3 = 5 \text{Ca(NO}_3)_2 + \text{N}_2 + 6 \text{H}_2\text{O}$
16. $\text{Pb}_3\text{O}_4 + 8 \text{HCl} = 3 \text{PbCl}_2 + 4 \text{H}_2\text{O} + \text{Cl}_2$
17. $\text{MnO}_2 + 4 \text{HCl} = \text{Cl}_2 + \text{MnCl}_2 + 2 \text{H}_2\text{O}$
18. $\text{MgCO}_3 + 2 \text{HNO}_3 = \text{Mg(NO}_3)_2 + \text{H}_2\text{O} + \text{CO}_2$
19. $5 \text{FeCl}_2 + 2 \text{Ag}_5\text{N} = \text{Fe}_5\text{N}_2 + 10 \text{AgCl}$
20. $14 \text{HNO}_3 + 3 \text{Cu}_2\text{O} = 6 \text{Cu(NO}_3)_2 + 2 \text{NO} + 7 \text{H}_2\text{O}$



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