Classifying & Balancing Equations

Classify each reaction as a synthesis (S), decomposition (D), single replacement (SR), double replacement (DR), or combustion (C) reaction. Then, balance each equation.

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| Reaction | Classification |
|  1. |  Li + AlCl3 → Al + LiCl |  |
|  2. |  NH3 → N2 + H2 |  |
|  3. |  K + Br2 → KBr |  |
|  4. |  C10H22 + O2 → CO2 + H2O |  |
|  5. |  NH4OH + H2CO3 → H2O + (NH4)2CO3 |  |
|  6. |  H2O → H2 + O2 |  |
|  7. |  Al + Cl2 → AlCl3  |  |
|  8. |  Zn + SnF4  → Sn + ZnF2 |  |
|  9. |  Ni + HCl → NiCl2 + H2 |  |
| 10. |  Au(CN)3 + Zn → Au + Zn(CN)2 |  |
| 11. |  O2 + Be → BeO |  |
| 12. |  FeCl3 + Na2SO3 → NaCl + Fe2(SO3)3 |  |
| 13. |  C8H18 + O2 → CO2 + H2O |  |
| 14. |  (NH4)2S + Mn(NO3)2 → NH4NO3 + MnS |  |
| 15. |  P4 + F2 → PF3 |  |
| 16. |  Al2(SO4)3 + Na3PO4 → Na2SO4 + AlPO4 |  |
| 17. |  CO2 + H2O → C6H12O6 + O2 |  |
| 18. |  H3(PO4) + Cu(OH)2 → H2O + Cu3(PO4)2 |  |

BLM 2-39, Classifying and Balancing Chemical Equations

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| **Reaction** | **Classification** |
|  1. | 3Li + AlCl3 → Al + 3LiCl | SR |
|  2. | 2NH3 → 3N2 + 3H2 | D |
|  3. | 2K + Br2 → 2KBr | S |
|  4. | 2C10H22 + 31O2 → 20CO2 + 22H2O | C |
|  5. | 2NH4OH + H2CO3 → 2H2O+ (NH4)2CO3 | DR |
|  6. | 2H2O → 2H2+ O2 | D |
|  7. | 2Al + 3Cl2 → 2AlCl3  | S |
|  8. | 2Zn + SnF4 → Sn + 2ZnF2 | SR |
|  9. | Ni + 2HCl → NiCl2 + H2 | SR |
| 10. | 2Au(CN)3 + 3Zn → 2Au +3Zn(CN)2 | SR |
| 11. | O2 + 2Be → 2BeO | S |
| 12. | 2FeCl3 + 3Na2SO3 → 6NaCl + Fe2(SO3)3 | DR |
| 13. | 2C8H18 + 25O2 → 16CO2 + 18 H2O | C |
| 14. | (NH4)2S + Mn(NO3)2 → 2NH4NO3 + MnS | DR |
| 15. | P4 + 6F2 → 4PF3 | S |
| 16. | Al2(SO4)3 + 2Na3PO4 →3Na2SO4 + 2AlPO4 | DR |
| 17. | 6CO2 + 6H2O → C6H12O6 + 6O2 | O |
| 18. | 2H3(PO4) + 3Cu(OH)2 → 6H2O + Cu3(PO4)2 | DR |