

Balancing Chemical Equations



CA Standards

Students know how to describe chemical reactions by writing balanced equations.

Law of Conservation of Mass

- In ordinary chemical reactions, the total mass of reacting substances is equal to the total mass of products
 - All atoms on the reactant side must appear on the product side, and in equal numbers
 - No new elements may appear
 - No elements may disappear

Synthesis Reactions

1. $\underline{\quad}\text{CaO} + \underline{\quad}\text{H}_2\text{O} \rightarrow \underline{\quad}\text{Ca(OH)}_2$
2. $\underline{\quad}\text{P}_4 + \underline{\quad}\text{O}_2 \rightarrow \underline{\quad}\text{P}_2\text{O}_5$
3. $\underline{\quad}\text{Ca} + \underline{\quad}\text{O}_2 \rightarrow \underline{\quad}\text{CaO}$
4. $\underline{\quad}\text{Cu} + \underline{\quad}\text{S}_8 \rightarrow \underline{\quad}\text{CuS}$
5. $\underline{\quad}\text{CaO} + \underline{\quad}\text{H}_2\text{O} \rightarrow \underline{\quad}\text{Ca(OH)}_2$
6. $\underline{\quad}\text{S}_8 + \underline{\quad}\text{O}_2 \rightarrow \underline{\quad}\text{SO}_2$
7. $\underline{\quad}\text{H}_2 + \underline{\quad}\text{N}_2 \rightarrow \underline{\quad}\text{NH}_3$
8. $\underline{\quad}\text{H}_2 + \underline{\quad}\text{Cl}_2 \rightarrow \underline{\quad}\text{HCl}$
9. $\underline{\quad}\text{Ag} + \underline{\quad}\text{S}_8 \rightarrow \underline{\quad}\text{Ag}_2\text{S}$
10. $\underline{\quad}\text{Cr} + \underline{\quad}\text{O}_2 \rightarrow \underline{\quad}\text{Cr}_2\text{O}_3$
11. $\underline{\quad}\text{Al} + \underline{\quad}\text{Br}_2 \rightarrow \underline{\quad}\text{AlBr}_3$
12. $\underline{\quad}\text{Na} + \underline{\quad}\text{I}_2 \rightarrow \underline{\quad}\text{NaI}$
13. $\underline{\quad}\text{H}_2 + \underline{\quad}\text{O}_2 \rightarrow \underline{\quad}\text{H}_2\text{O}$
14. $\underline{\quad}\text{Al} + \underline{\quad}\text{O}_2 \rightarrow \underline{\quad}\text{Al}_2\text{O}_3$

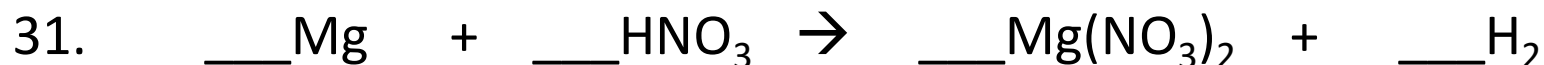
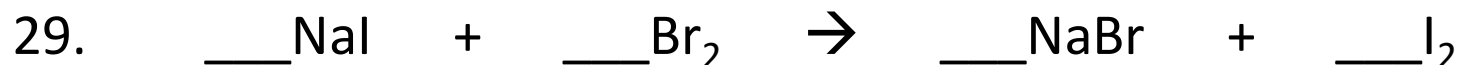
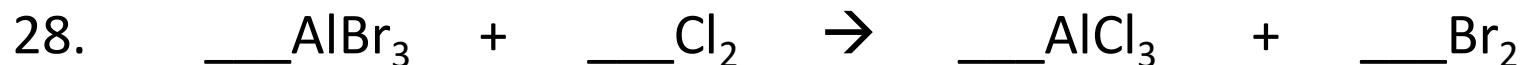
Decomposition Reactions

15. ___ BaCO₃ → ___ BaO + ___ CO₂
16. ___ MgCO₃ → ___ MgO + ___ CO₂
17. ___ K₂CO₃ → ___ K₂O + ___ CO₂
18. ___ Zn(OH)₂ → ___ ZnO + ___ H₂O
19. ___ Fe(OH)₂ → ___ FeO + ___ H₂O
20. ___ Ni(ClO₃)₂ → ___ NiCl₂ + ___ O₂
21. ___ NaClO₃ → ___ NaCl + ___ O₂
22. ___ KClO₃ → ___ KCl + ___ O₂
23. ___ H₂SO₄ → ___ H₂O + ___ SO₃
24. ___ H₂CO₃ → ___ H₂O + ___ CO₂
25. ___ Al₂O₃ → ___ Al + ___ O₂
26. ___ Ag₂O → ___ Ag + ___ O₂

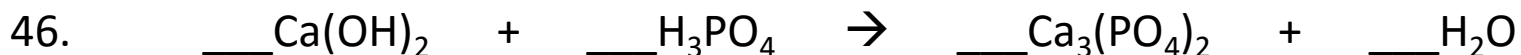
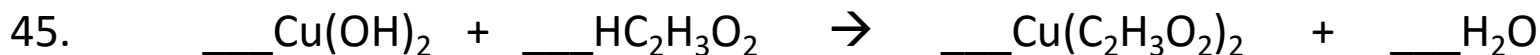
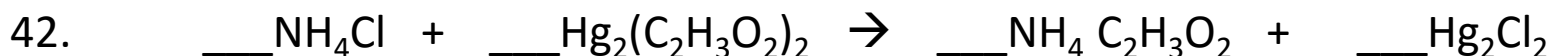
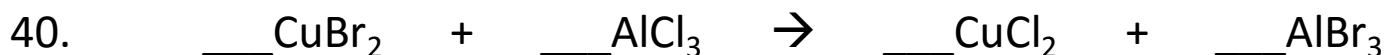
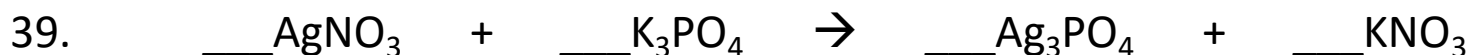
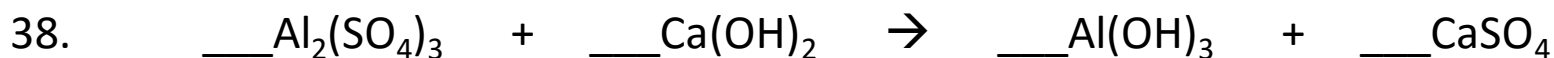
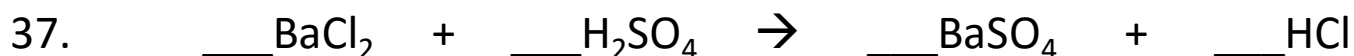
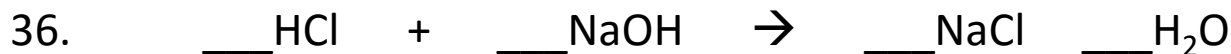
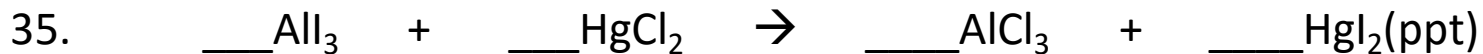
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26. ___ Ag₂O → ___ Ag + ___ O₂

Single Replacement Reactions



Double Replacement Reactions



Combustion Reactions

