

Examples using mhchem

1. Covalent compounds: H_2O
2. Ionic compounds: NaCl
3. Hydrates: $\text{CuSO}_4 \cdot 5 \text{H}_2\text{O}$
4. Stoichiometry: $2 \text{H}_2 + \text{O}_2 \longrightarrow 2 \text{H}_2\text{O}$
5. Acids and bases: $\text{HCl} + \text{NaOH} \longrightarrow \text{NaCl} + \text{H}_2\text{O}$
6. Chemical equation: $\text{H}_2\text{O} \longrightarrow \text{H}^+ + \text{OH}^-$
7. Simple Isotopes: ^{14}C
8. Isotopes: $^{227}_{90}\text{Th}^+$
9. Reaction arrows: $\text{A} \xrightarrow{\text{H}_2\text{O}} \text{B}$
10. States of matter: $\text{H}_2\text{O}(\text{l}) \longrightarrow \text{H}_2\text{O}(\text{g})$
11. States of aggregation: $\text{H}_2(\text{g}) + \text{O}_2(\text{g}) \longrightarrow \text{H}_2\text{O}(\text{l})$
12. Charges: SO_4^{2-}
13. Charges: $\text{SO}_4^{2-} + \text{Ba}^{2+} \longrightarrow \text{BaSO}_4 \downarrow$
14. Oxidation states: $\text{Fe}^{3+} + \text{Cr}_2\text{O}_7^{2-} \longrightarrow \text{Fe}^{2+} + \text{Cr}^{3+}$
15. Equilibrium arrows: $\text{CO}_2 + \text{H}_2\text{O} \rightleftharpoons \text{H}_2\text{CO}_3$
16. Equilibrium arrows: $\text{CO}_2 + \text{H}_2\text{O} \rightleftharpoons \text{H}^+ + \text{HCO}_3^-$
17. Equilibrium: $K = \frac{[\text{Hg}^{2+}][\text{Hg}]}{[\text{Hg}_2^{2+}]}$
18. Precipitation: $\text{AgCl}(\text{s}) \rightleftharpoons \text{Ag}^+ + \text{Cl}^-$
19. Acids and bases: $\text{HCl} + \text{NaOH} \longrightarrow \text{NaCl} + \text{H}_2\text{O}$
20. Complex ions: $[\text{Cu}(\text{NH}_3)_4(\text{H}_2\text{O})_2]^{2+}$
21. Hydrates: $\text{CuSO}_4 \cdot 5 \text{H}_2\text{O}$
22. Organic compounds: $\text{CH}_3\text{CH}_2\text{OH}$
23. Polymers: $(\text{C}_2\text{H}_4)_n$
24. Biochemical compounds: $\text{ATP} + \text{H}_2\text{O} \longrightarrow \text{ADP} + \text{Pi} + \text{H}^+$
25. Nuclear reactions: $^{14}_6\text{C} \longrightarrow ^{14}_7\text{N} + \text{e}^- + \bar{\nu}_e$
26. Redox reactions: $\text{Zn} + \text{Cu}^{2+} \longrightarrow \text{Zn}^{2+} + \text{Cu}$
27. Ionic equations: $\text{Ag}^+(\text{aq}) + \text{Cl}^-(\text{aq}) \longrightarrow \text{AgCl}(\text{s})$
28. Half-reactions:
Oxidation half-reaction: $\text{Zn} \longrightarrow \text{Zn}^{2+} + 2 \text{e}^-$
Reduction half-reaction: $\text{Cu}^{2+} + 2 \text{e}^- \longrightarrow \text{Cu}$
29. Reaction mechanisms:
Step 1: $\text{NO}_2 + \text{NO}_3 \longrightarrow \text{NO} + \text{NO}_2 + \text{O}_2$
Step 2: $\text{NO} + \text{O}_3 \longrightarrow \text{NO}_2 + \text{O}_2$
Overall reaction: $\text{NO}_3 + \text{O}_3 \longrightarrow \text{NO}_2 + \text{O}_2 + \text{O}_2$