

Exercise walk-through

4.2

Net Ionic Equations

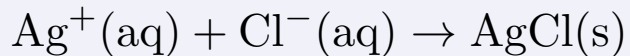
AP Chemistry

Net ionic equations

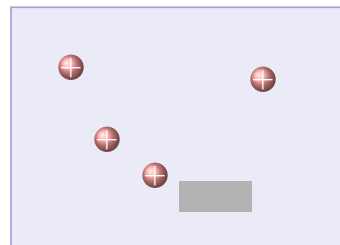
A **precipitation reaction** makes an insoluble solid. Strip out the **spectator ions** that do not change:

Silver + chloride

molecular: $\text{AgNO}_3 + \text{NaCl} \rightarrow \text{AgCl}\downarrow + \text{NaNO}_3$



Use **solubility rules** to see which product is insoluble.



AgCl solid

Exercises 2.1-2.3

2.1 Write Na^+ and Cl^- as they appear when NaCl dissolves. [1]

2.2 In a reaction, K^+ appears on both sides unchanged. What is it called? [1]

2.3 Which species are NOT split into ions in an ionic equation? [1]

Exercises 2.1·2.3

2.1 Write Na^+ and Cl^- as they appear when NaCl dissolves. [1]

2.1

- $\text{Na}^+(\text{aq}) + \text{Cl}^-(\text{aq})$ (separate ions)

2.2 In a reaction, K^+ appears on both sides unchanged. What is it called? [1]

2.2

- A spectator ion

2.3 Which species are NOT split into ions in an ionic equation? [1]

2.3

- Solids, gases, molecular substances (and weak electrolytes)

Exercise 3.1

3.1 A spectator ion is one that

[1]

☐

A forms the precipitate

B appears unchanged on both sides

C is a gas

D is the solvent

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3.1 A spectator ion is one that

[1]

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A forms the precipitate

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C is a gas

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3.1 B

- unchanged on both sides

Exercise 3.2 (a)

3.2 Consider $\text{Pb}(\text{NO}_3)_2(aq) + 2\text{KI}(aq) \rightarrow \text{PbI}_2(s) + 2\text{KNO}_3(aq)$.

(a) Identify the spectator ions.

[2]

Exercise 3.2 (a)

3.2 Consider $\text{Pb}(\text{NO}_3)_2(aq) + 2\text{KI}(aq) \rightarrow \text{PbI}_2(s) + 2\text{KNO}_3(aq)$.

(a) Identify the spectator ions.

[2]

(a)

- K^+ and NO_3^-

Exercise 3.2 (b)

3.2 Consider $\text{Pb}(\text{NO}_3)_2(aq) + 2\text{KI}(aq) \rightarrow \text{PbI}_2(s) + 2\text{KNO}_3(aq)$.

(b) Write the net ionic equation.

[2]

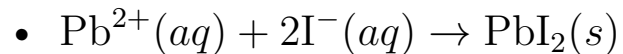
Exercise 3.2 (b)

3.2 Consider $\text{Pb}(\text{NO}_3)_2(aq) + 2\text{KI}(aq) \rightarrow \text{PbI}_2(s) + 2\text{KNO}_3(aq)$.

(b) Write the net ionic equation.

[2]

(b)



Exercise 3.3

3.3 For the reaction of $\text{HCl}(aq)$ with $\text{NaOH}(aq)$ to form water and $\text{NaCl}(aq)$, write the net ionic equation. [3]

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3.3

- Complete ionic cancels Na^+ and Cl^- ; net ionic: $\text{H}^+(aq) + \text{OH}^-(aq) \rightarrow \text{H}_2\text{O}(l)$