12: State symbols of reactants and products:

State symbols

Sometimes it is useful to know whether the reactants and products in a chemical reaction are solids, gases, liquids or dissolved in water. We can add state symbol to a symbol equation to show this.

State symbol and meaning

Symbol	Meaning
(s)	solid
(I)	liquid
(g)	gas
(aq)	aqueous (dissolved in water)

So for the reaction between sodium and water, this is the symbol equation with state symbols:

$$2Na(s) + 2H_2O(1) \rightarrow 2NaOH(aq) + H_2(q)$$

Example 1:

[M/J/04-P3-3a]

3 An organic compound decomposes to form nitrogen.

$$C_6H_5N_2C\emph{1}(aq) \hspace{1cm} \rightarrow \hspace{1cm} C_6H_5C\emph{1}(I) \hspace{1cm} + \hspace{1cm} N_2(g)$$

(a) Explain the state symbols.