1.8 Chemical reactions

Task 3 Conclusion. (discussion)

In your conclusion you must;

- Compare and contrast the four chemical changes.
- Link your observations to the type of reaction.
- Use the solubility rules to explain the formation of the precipitate.

Introduction

- list the four main types of reactions briefly and discuss what a chemical reaction is (using the terms reactant, reaction, products, species etc)

Combination Reactions

Combination reactions occur when two or more reactants combine for form one product.

An example is a metal and oxygen forming a metal oxide or a metal and a non-metal reacting to form a ionic compound.

- General reaction description
- Compare to other reaction types
- Contrast to other reaction types
- Write down observations: colour/ state of each reactant, the method you used and the colour/state of the product(s)
- Link your observations to the general reaction description to explain why you consider that to be evidence to be that type of reaction
- Include both word and formula (balanced with states) in your discussion

Precipitation Reactions

Precipitation reactions occur when two solutions react together to form a solid that settles out of the solution. The solid formed is called the precipitate.

An example is a lead (II) nitrate solution mixed with a potassium iodide solution to form a lead iodide precipitate.

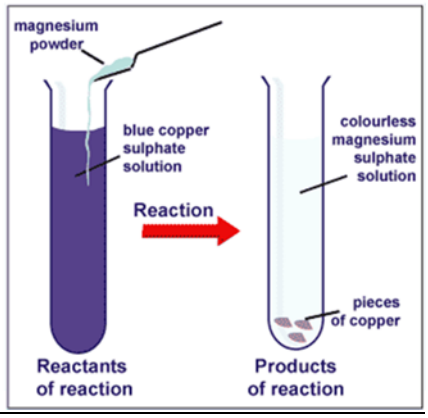
- General reaction description
- Compare to other reaction types
- Contrast to other reaction types
- Write down observations: original colour of each solution and the final colour/state of the product.
- Link your observations to the general reaction description to explain why you consider that to be evidence to be that type of reaction – you must use your solubility rules to state why it is you believe the precipitate formed is the one you have written down and why the remaining ions are still in solution

- Include both word and formula (balanced with states) in your discussion
- Include both the full formula equation for both original solutions and then the ionic equation using just ions that form your precipitate. Don't forget ion charges and states

Displacement Reactions

Displacement reactions occur when a metal and salt (metal + non-metal ionic compound) solution are mixed and the metal replaces the metal in the salt.

An example would be reacting magnesium metal and copper sulfate to produce magnesium sulfate plus copper metal.

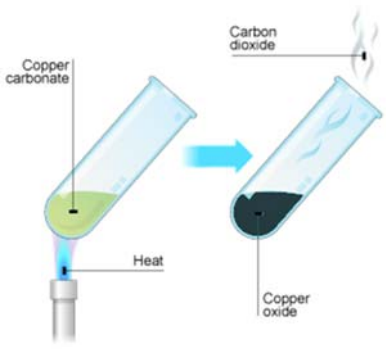


- General reaction description
- Compare to other reaction types
- Contrast to other reaction types
- Write down observations: colour/ state of each reactant, the method you used and the colour/state of the product(s)
- Link your observations to the general reaction description to explain why you consider that to be evidence to be that type of reaction
- Discuss the reactivity of the metal added compared to the metal (in its ion form) in the solution and why the more reactive metal replaces the less reactive metal
- Include both word and formula (balanced with states) in your discussion

Thermal Decomposition Reactions

Thermal decomposition reactions occur when one substance is broken apart with the use of heat energy into smaller substances.

An example is copper carbonate heated which breaks down into carbon dioxide and copper oxide.



- General reaction description
- Compare to other reaction types
- Contrast to other reaction types
- Write down observations: colour/ state of reactant, the method you used and the colour/state of the product(s)
- Discuss use of Limewater test to confirm the presence of Carbon dioxide gas
- Link your observations to the general reaction description to explain why you consider that to be evidence to be that type of reaction
- Include both word and formula (balanced with states) in your discussion