8947 version 3
Characterise oxidation-reduction reactions
Level 2 Credits 3

Identify oxidation-reduction processes, and write balanced equations for oxidation-reduction reactions.

- ❑ Definitions of oxidation and reduction
  - o In terms of oxygen & hydrogen
  - o In terms of electrons lost/gained
  - o In terms of changes to oxidation number
- ❑ Oxidising agents (appearance, and what they are reduced to)
  - o O_2
  - o Cl_2
  - o dilute acid (with metals)
  - o Fe^{3+}
  - o H_2O_2
  - o MnO_4^-/H^+
  - o $Cr_2O_7^{2-}/H^+$
- ❑ Reducing agents (appearance, and what they are oxidised to)
  - o Zn
  - o Mg
  - o Fe
  - o C
  - o H_2
  - o SO_2
  - o Fe^{2+}
  - o Br^-
  - o I^-
- ❑ Products of oxidation-reduction reactions are identified from experimental observations.
- ❑ Oxidation and reduction processes are identified from given reactants and products.
- ❑ Write balanced equations for oxidation-reduction reactions.
  - o Writing half equations for *given* reactants and products
  - o Combining half equations to achieve balanced oxidation-reduction equations using the ion-electron or equivalent method.
- ❑ Be able to assign oxidation numbers
  - o Oxidation and reduction processes are identified by changes in oxidation numbers of reactants and products.

Notes