Getting the most from reactants

- How can we maximise profit and minimise the impact on the environment when doing an industrial chemical processes?

- How can we design industrial chemical processes?

- How can we calculate masses obtained/used in chemical reactions?

- How can we calculate gas volumes obtained/used in chemical reactions?

- How can we calculate the "atom economy" of a chemical reaction?

- How can we calculate the "percentage yield" of a chemical reaction?

- How can we identify the excess and limiting reactants in a chemical reaction?

SQA

Equilibria

- What is meant by "dynamic equilibrium"?
- What are the relative rates of the forward and reverse reactions of a closed system at equilibrium?
- What is meant by "position of equilibrium"?
- How can changes in concentration, pressure and temperature affect the position of equilibrium of a system?
- How can changes in concentration, pressure and temperature affect the relative rates of the forward and reverse reactions of a closed system at equilibrium?
- How does adding a catalyst affect a system at equilibrium?

Chemical Energy

- What is meant by "enthalpy"?
- How can we calculate the enthalpy change for a chemical reaction?
- What is "Enthalpy of combustion"?
- How can "Enthalpy of combustion" be calculated?
- How can we calculate energy changes using Hess' Law?
- How can we calculate energy changes using Bond enthalpies?

Oxidising and Reducing Agents

- How can we identify an oxidising or a reducing agent?
- Which atoms, compounds, ions and molecules are the strongest. Oxidising and reducing agents?
- How can we write ion-election half-equations?
- How can we combine ion-electron half-equations?
- What can we use oxidising agents for?

Chemical Analysis

- How can we use chromatography to separate a mixture?
- How can we interpret the results from chromatography experiments?
- What is a standard solution?
- How can we prepare a standard solution?
- How can we calculation quantities from a titration?
- How can we calculate quantities from a redox titration?
- How can we calculate quantities from a balanced equation?

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