

HSC Chemistry

Week 1

Summary Notes

Name:

Class:

Tutor:

Module 6: Acid and Base Reactions

- investigate the correct IUPAC nomenclature and properties of common inorganic acids and bases (ACSCH067)

Acids Properties

Produce when ionised in water. pH is 7. Turn blue litmus paper to

Base Properties

Produce when dissociate in water. pH isthan 7. Turn red litmus paper to

Acid-Metal hydroxide/oxide Reactions:

Acid-Carbonate Reactions:

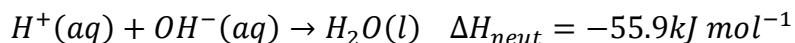
Acid-Reactive Metal Reactions (Redox reaction)

Acid- Metal Carbonate/Hydrogen Carbonate Reactions:

Exception (Ammonia)

Module 6: Acid and Base Reactions

- Conduct a practical investigation to measure the enthalpy of neutralisation (ACSCH093)
- The enthalpy of neutralisation is the enthalpy change measured by when an acid and bases react to produce one mole of water



$$\Delta H_{neut} = \frac{q}{n(H_2O)} \text{ where } q = m \times c \times \Delta T$$

Where

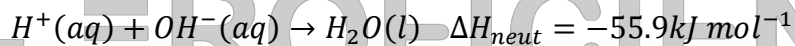
q is the amount of energy released by the neutralisation reaction (in J)

m is the mass of the salt solution = the combined mass of the acid and base (in g)

c is the specific heat capacity of water ($4.18 J g^{-1} K^{-1}$)

ΔT is the temperature change of the mixture of the acid and base (in K or °C).

- Since strong acids and strong bases completely dissociate in water. The enthalpy of neutralisation will be the value

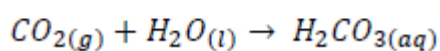
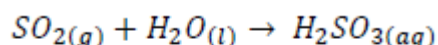


Module 6: Acid and Base Reactions

- explore the changes in definitions and models of an acid and a base over time to explain the limitations of each model, including but not limited to:

Antoine Lavoisier [1776 “Oxides”]

- He investigated oxides of different elements, and found that non-metal..... reacted with, producing solutions. He concluded that an acid must contain



Davy [1810 “Hydrogen”]

- He demonstrated that hydrochloric acid did not contain, thus disproving Lavoisier’s theory. Davy suggested that must be the unifying component of acids rather than oxygen
- However this idea didn’t explain why other compounds containing hydrogen are acidic

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