

CAIE IGCSE Chemistry

7.2 Oxides

Notes

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Classify oxides as either acidic or basic, related to metallic and non-metallic character

- Many metals and non-metals react with oxygen in the air when they are heated to produce metal oxides and non-metal oxides
- The nature of these oxides is either acidic or basic
- Basic oxides:
 - Formed when metals react with oxygen
 - Examples: CuO and CaO
 - When basic oxides react with water, the product will be a base:
 - E.g. $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2$
- Acidic oxides:
 - Formed when non-metals react with oxygen
 - Examples: CO_2 and SO_2
 - When acidic oxides react with water, the product will be an acid:
 - E.g. $\text{SO}_2 + \text{H}_2\text{O} \rightarrow \text{H}_2\text{SO}_3$ (sulfurous acid)

(Extended only) Describe amphoteric oxides

- Amphoteric oxides are oxides that react with acids and bases to produce a salt and water
- Amphoteric substances can act as an acid and a base
- Examples: Al_2O_3 and ZnO

