

Physical and Chemical Properties of Metals

Chapter 3: Metals and Non-metals · Topic 1

Key Concept

Highly reactive metals like sodium and potassium react vigorously (even explosively) with water at room temperature, while less reactive metals like iron react only with steam, and metals like gold and silver do not react with water at all. This pattern of reactivity, known as the reactivity series, allows chemists to predict how a metal will behave in various reactions, including which metal can displace another from a compound.

Quick Revision Notes

- Metals: malleable, ductile, lustrous, good conductors of heat and electricity.
- Metals react with oxygen (forming basic oxides), water, and acids (releasing H_2 gas).
- Reactivity with water varies greatly: sodium reacts violently, iron reacts only with steam, gold does not react.
- The reactivity series predicts metal behaviour in reactions and displacement.

Practice Questions

- 1 Write the reaction of a metal with dilute hydrochloric acid.
- 2 Explain why gold does not react with water, unlike sodium.
- 3 Describe the general chemical properties shared by most metals.