

# Chemistry For Igcse 2009 Roger Norris Roger Stanbridge

Chemistry For Igcse 2009 Roger Norris Roger Stanbridge Chemistry for IGCSE 2009 A Comprehensive Guide Authors Roger Norris Roger Stanbridge Target Audience This textbook is designed for students taking the IGCSE International General Certificate of Secondary Education Chemistry examination specifically the 2009 syllabus The book is structured into eight distinct sections each addressing a key area of chemistry Each section is further divided into chapters offering a detailed breakdown of each concept Section 1 to Chemistry Chapter 1 What is chemistry Introduces the nature and scope of chemistry its importance in our daily lives and the basic concepts such as atoms elements and compounds Chapter 2 Measurement and units Covers the essential units of measurement used in chemistry including SI units and explores how to perform calculations involving these units Chapter 3 The atom and its structure Delves into the structure of the atom including the nucleus protons neutrons and electrons It explains the concept of atomic number mass number isotopes and the periodic table Chapter 4 Chemical bonding Explores the different types of chemical bonds including ionic covalent and metallic bonding It also discusses the role of electron configuration and electronegativity in bond formation Section 2 States of Matter Chapter 5 The states of matter Explains the characteristics of solids liquids and gases and discusses the relationships between temperature pressure and volume Chapter 6 Changes of state Covers the processes of melting freezing boiling condensation sublimation and deposition It explores the concept of enthalpy change and how it relates to these changes Chapter 7 Gases Focuses on the behavior of gases including gas laws like Boyles Law Charles Law and the Ideal Gas Law It also examines the concept of pressure and its measurement 2 Section 3 Chemical Reactions and Stoichiometry Chapter 8 Chemical reactions Introduces the concept of chemical reactions including the types of reactions eg combination decomposition displacement double displacement and explores the concept of balancing chemical equations Chapter 9 Stoichiometry Covers the quantitative aspects of chemical reactions including mole calculations mass calculations and limiting reactant calculations Section 4 The Periodic Table and Periodicity Chapter 10 The periodic table Provides a detailed overview of the periodic table including the arrangement of elements periods groups and the trends in properties across and down the periodic table Chapter 11 Periodicity Explores the periodic trends of atomic radius ionization energy electron affinity and electronegativity It explains how these trends influence the chemical reactivity of elements Section 5 Acids Bases and Salts Chapter 12 Acids and bases Defines acids and bases based on the Arrhenius and Brnsted Lowry theories It discusses the properties of acids and bases their reactions with metals and carbonates and the concept of pH Chapter 13 Salts Explains the formation of salts from the neutralization reaction of acids and bases It covers the properties of salts and their applications Section 6 Organic Chemistry Chapter 14 to organic chemistry Introduces the concept of organic compounds including

the types of hydrocarbons their structures and properties Chapter 15 Alkanes alkenes and alkynes Explores the structure and properties of saturated and unsaturated hydrocarbons including their reactions combustion substitution and addition reactions Chapter 16 Functional groups Discusses various functional groups in organic chemistry including alcohols aldehydes ketones carboxylic acids and esters It explores their properties and reactions Section 7 Chemical Calculations Chapter 17 Calculations involving reacting masses Reviews the basic calculations involving moles mass and volume for chemical reactions It provides numerous examples and exercises for students to practice 3 Chapter 18 Empirical and molecular formulas Explains how to determine the empirical and molecular formulas of compounds from experimental data Section 8 Environmental Chemistry Chapter 19 The atmosphere Covers the composition of the atmosphere the greenhouse effect and the impact of human activities on the environment Chapter 20 Water Explores the properties of water its importance for life and the sources and effects of water pollution Chapter 21 Sustainable development Discusses the concept of sustainable development and the importance of reducing pollution and conserving resources Features Clear and concise language The authors use simple and straightforward language to make complex concepts accessible to students Numerous diagrams and illustrations Visual aids help students understand abstract concepts and visualize chemical processes Worked examples The book includes numerous worked examples to demonstrate how to apply the concepts to realworld problems Practice questions Each chapter includes a set of practice questions to test student understanding and prepare them for examinations Glossary of terms A comprehensive glossary provides definitions of key terms used throughout the book Conclusion Chemistry for IGCSE 2009 by Roger Norris and Roger Stanbridge is a highly comprehensive textbook designed to provide students with a strong foundation in the subject Its well structured approach clear explanations and engaging features make it an invaluable resource for IGCSE students preparing for their examinations

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