

## STUDY GUIDE FOR MODULE NO. 4

## HYDROCARBON CHAINS AND RINGS



## MODULE OVERVIEW

Many hydrocarbons occur in nature. In addition to making up fossil fuels, they are present in trees and plants, as, for example, in the form of pigments called carotenes that occur in carrots and green leaves. More than 98 percent of natural crude rubber is a hydrocarbon polymer, a chainlike molecule consisting of many units linked together. The structures and chemistry of individual hydrocarbons depend in large part on the types of chemical bonds that link together the atoms of their constituent molecules.

Nineteenth-century chemists classified hydrocarbons as either aliphatic or aromatic on the basis of their sources and properties. Aliphatic (from Greek *alipha*, "fat") described hydrocarbons derived by chemical degradation of fats or oils. Aromatic hydrocarbons constituted a group of related substances obtained by chemical degradation of certain pleasant-smelling plant extracts. The terms *aliphatic* and *aromatic* are retained in modern terminology, but the compounds they describe are distinguished on the basis of structure rather than origin.



## MODULE LEARNING OBJECTIVES

At the end of the unit, the student should be able to:

1. Identify the structures and homologous members of alkene, alkane and alkyne families.
2. Describe the structure of benzene and the substituted aromatics.
3. Name the organic compounds using IUPAC.
4. Differentiate the types of structural compounds.



## LESSON 1: HYDROCARBONS: REPRESENTATIVE ALKANES, ALKENES, ALKYNES, AND AROMATIC COMPOUNDS

**HYDROCARBONS**

The simplest organic compounds are those composed of only two elements: carbon and hydrogen. These compounds are called hydrocarbons. Hydrocarbons themselves are separated into two types: aliphatic hydrocarbons and aromatic hydrocarbons. Aliphatic hydrocarbons are hydrocarbons based on chains of C atoms. There are three types of aliphatic hydrocarbons. Alkanes are aliphatic hydrocarbons with only single covalent bonds. Alkenes are aliphatic hydrocarbons that contain at least one C=C double bond, and alkynes are aliphatic hydrocarbons that contain a C=C triple bond. Occasionally, we find an aliphatic hydrocarbon with a ring of C atoms; these hydrocarbons are called cycloalkanes (or cycloalkenes or cycloalkynes).

The general molecular formulas and molecular structures of the alkanes, alkenes, and alkynes.

Group	General Molecular Formula	Example Compound	Molecular Structure
Alkanes	$C_nH_{2n+2}$	Ethane	
Alkenes	$C_nH_{2n}$	Ethene	
Alkynes	$C_nH_{2n-2}$	Ethyne	

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construction emissions and pollution **Synthesis of Hydrocarbons in the Gasoline Range, 1938-1953** American Petroleum Institute. Research Project 45, 1953

**State Course of Study** Virginia, Virginia. DEPT. OF PUBLIC INSTRUCTION., Virginia. State Board of Education, 1918 Oil & Gas Journal, 1928 **Industrial Arts Index**, 1928

Meteorological and Geostrophysical Abstracts, 1992 Chemical Age, 1924 The Mining World, 1910 **Mining and Engineering World**, 1910 **Metallurgical & Chemical Engineering** Eugene Franz Roeber, Howard Coon Parmelee, 1916 **The Pharmaceutical Era**, 1892 **Geophysical Prospecting**, 1956 Publishes primary research on the science of geophysics as it applies to exploration especially oil and mineral exploration Scientific American, 1916

**Drugs, Oils & Paints**, 1924 Journal of the Franklin Institute Franklin Institute (Philadelphia, Pa.), 1911 Vols 1-69 include more or less complete patent reports of the U.S. Patent Office for years 1825-59

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## **Table of Contents Hydrocarbons Study Guide For Content Mastery**

1. Understanding the eBook Hydrocarbons Study Guide For Content Mastery
  - The Rise of Digital Reading Hydrocarbons Study Guide For Content Mastery
  - Advantages of eBooks Over Traditional Books
2. Identifying Hydrocarbons Study Guide For Content Mastery
  - Exploring Different Genres
  - Considering Fiction vs. Non-Fiction
  - Determining Your Reading Goals
3. Choosing the Right eBook Platform
  - Popular eBook Platforms
  - Features to Look for in an Hydrocarbons Study Guide For Content Mastery
  - User-Friendly Interface
4. Exploring eBook Recommendations from Hydrocarbons Study Guide For Content Mastery
  - Personalized Recommendations
  - Hydrocarbons Study Guide For Content Mastery User Reviews and Ratings
  - Hydrocarbons Study Guide For Content Mastery and Bestseller Lists
5. Accessing Hydrocarbons Study Guide For Content Mastery Free and Paid eBooks
  - Hydrocarbons Study Guide For Content Mastery Public Domain eBooks
  - Hydrocarbons Study Guide For Content Mastery eBook Subscription Services
  - Hydrocarbons Study Guide For Content Mastery Budget-Friendly Options
6. Navigating Hydrocarbons Study Guide For Content Mastery eBook Formats

- ePub, PDF, MOBI, and More
  - Hydrocarbons Study Guide For Content Mastery Compatibility with Devices
  - Hydrocarbons Study Guide For Content Mastery Enhanced eBook Features
7. Enhancing Your Reading Experience
    - Adjustable Fonts and Text Sizes of Hydrocarbons Study Guide For Content Mastery
    - Highlighting and Note-Taking Hydrocarbons Study Guide For Content Mastery
    - Interactive Elements Hydrocarbons Study Guide For Content Mastery
  8. Staying Engaged with Hydrocarbons Study Guide For Content Mastery
    - Joining Online Reading Communities
    - Participating in Virtual Book Clubs
    - Following Authors and Publishers Hydrocarbons Study Guide For Content Mastery
  9. Balancing eBooks and Physical Books Hydrocarbons Study Guide For Content Mastery
    - Benefits of a Digital Library
    - Creating a Diverse Reading Collection Hydrocarbons Study Guide For Content Mastery
  10. Overcoming Reading Challenges
    - Dealing with Digital Eye Strain
    - Minimizing Distractions
    - Managing Screen Time
  11. Cultivating a Reading Routine Hydrocarbons Study Guide For Content Mastery
    - Setting Reading Goals Hydrocarbons Study Guide For Content Mastery
    - Carving Out Dedicated Reading Time
  12. Sourcing Reliable Information of Hydrocarbons Study Guide For Content Mastery
    - Fact-Checking eBook Content of Hydrocarbons Study Guide For Content Mastery
    - Distinguishing Credible Sources
  13. Promoting Lifelong Learning
    - Utilizing eBooks for Skill Development
    - Exploring Educational eBooks
  14. Embracing eBook Trends
    - Integration of Multimedia Elements
    - Interactive and Gamified eBooks

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