

# UPGRADE to the Bundle

## Crash Course - CHEMISTRY 46 Episode Series Bundle

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### Crash Course Chemistry #42: Aromatics & Cyclic Compounds

Name: \_\_\_\_\_ Date: \_\_\_\_\_

You can access the video here → <https://youtu.be/kXFEex-dABU7si-GKH0ao-FIEL.mxdDp>

- Carbon atoms can form chains, rings, or \_\_\_\_\_ structures.
- Compounds with carbon rings and a pleasant smell are called \_\_\_\_\_ compounds.
- The simplest cyclic hydrocarbon is \_\_\_\_\_.
- Due to tight bond angles, \_\_\_\_\_ is highly reactive and unstable.
- \_\_\_\_\_ has nearly perfect bond angles for tetrahedral orbitals, making it very stable.
- \_\_\_\_\_ exist but are hard to form because the triple bond is linear and resists bending.
- In organic chemistry, branches or groups that replace hydrogen atoms are called \_\_\_\_\_.
- The molecule  $C_6H_6$  with resonance and a sweet gasoline-like smell is called \_\_\_\_\_.
- Resonance in aromatic compounds occurs when \_\_\_\_\_ are distributed so that no single Lewis structure can represent the molecule.
- In resonance, the bonds are not fixed but are often described as \_\_\_\_\_ bonds between carbons.
- When a benzene ring is used as an attachment to another molecule, it's called a \_\_\_\_\_ group.
- A \_\_\_\_\_ group is a phenyl group joined by a methyl group instead of directly.
- Two aromatic compounds can be joined together in a reaction called \_\_\_\_\_.
- Removing double bonds from an aromatic compound through the addition of hydrogen atoms is called \_\_\_\_\_.
- Organic molecules can integrate straight chains, cyclic structures, and \_\_\_\_\_ groups within the same molecule.

### Crash Course Chemistry #42: Aromatics & Cyclic Compounds KEY

- Carbon atoms can form chains, rings, or **cyclic** structures.
- Compounds with carbon rings and a pleasant smell are called **aromatic** compounds.
- The simplest cyclic hydrocarbon is **cyclopropane**.
- Due to tight bond angles, **cyclopropane** is highly reactive and unstable.
- Cyclohexane** has nearly perfect bond angles for tetrahedral orbitals, making it very stable.
- Cycloalkynes** exist but are hard to form because the triple bond is linear and resists bending.
- In organic chemistry, branches or groups that replace hydrogen atoms are called **substituents**.
- The molecule  $C_6H_6$  with resonance and a sweet gasoline-like smell is called **benzene**.
- Resonance in aromatic compounds occurs when **electrons** are distributed so that no single Lewis structure can represent the molecule.
- In resonance, the bonds are not fixed but are often described as **1.5** bonds between carbons.
- When a benzene ring is used as an attachment to another molecule, it's called a **phenyl** group.
- A **benzyl** group is a phenyl group joined by a methyl group instead of directly.
- Two aromatic compounds can be joined together in a reaction called **coupling**.
- Removing double bonds from an aromatic compound through the addition of hydrogen atoms is called **hydrogenation**.
- Organic molecules can integrate straight chains, cyclic structures, and **aromatic** groups within the same molecule.

15 Questions

Answer Key Included

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