

Chapter 9 Carbon Chemistry

Section 9.2 Substituted Hydrocarbons**(pages 272–274)**

This section discusses organic compounds that contain atoms of elements other than carbon and hydrogen. It also explains the relationship between the properties of organic compounds and functional groups.

Reading Strategy (page 272)

Monitoring Your Understanding As you read, complete the table by connecting each functional group with the type of compound that contains the functional group. For more information on this Reading Strategy, see the **Reading and Study Skills** in the **Skills and Reference Handbook** at the end of your textbook.

Connecting Functional Groups to Types of Compounds	
Functional Group	Type of Compound
–OH	
–COOH	
–NH ₂	

- Name the two main products when methane and chlorine react.
 - _____
 - _____
- To which environmental problem have researchers connected halocarbons containing chlorine and fluorine? _____

- Describe a substituted hydrocarbon. _____

- Is the following sentence true or false? The functional group in a substituted hydrocarbon determines the properties of the compound. _____

Alcohols (page 273)

- Methanol and ethanol are two examples of a class of organic compounds called _____.
- The functional group in an alcohol is represented as –OH and is called a(n) _____ group.
- Identify two ways a halocarbon can be produced.
 - _____
 - _____

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Organic Acids and Bases (pages 273–274)

8. What two physical properties do organic acids tend to have?
- _____
 - _____
9. Is the following sentence true or false? Amines are organic bases. _____
10. Name three products where amines can be found.
- _____
 - _____
 - _____
11. Complete the following table.

Substituted Hydrocarbons		
Type of Compound	Name of Functional Group	Formula of Functional Group
	Hydroxyl	
Organic acid		-COOH
Organic base	Amino	

Esters (page 274)

12. What type of compound gives many flowers a pleasant odor?

13. Which two types of compounds can react and form esters?
- _____
 - _____
14. Circle the letter of the other product of the reaction that forms an ester.
- an alcohol
 - carbon dioxide
 - a salt
 - water
15. Is the following sentence true or false? Esters are used to make various fruit flavors in processed foods. _____