

11 • Carbon Chemistry

STUDY QUESTIONS

- Draw the structural formulas for:
 - 2-methylpentane
 - 2,2-dimethylpropane
- Classify the following as alkanes, alkenes, or alkynes
 C_2H_4 C_6H_{10} C_3H_8 C_4H_{10} C_5H_{12}
- How many isomers of $C_4H_{10}O$ are there? Classify the isomers you draw.
- How many isomers of the alkene pentene C_5H_{10} are there?
- Draw three examples of the structural isomers of alcohol $C_5H_{11}OH$ that are primary, secondary, and tertiary.
- What condensation products would be formed from:
 - ethanol and formic acid
 - acetic acid and dimethylamine
 - propanol and propanoic acid
 - butyric acid and aniline
- Organic compounds have names with characteristic endings. To what classes of organic compounds do the following endings belong?
 - oic acid
 - ene
 - al
 - one
 - ol
 - oate
- What products result from the oxidation of
 - ethanol
 - 2-propanol (isopropanol)
 - acetaldehyde (ethanal)
 - methanol
- Draw:
 - an aldehydes with the molecular formula C_4H_8O
 - a ketone with the molecular formula C_4H_8O
 - an ester with the molecular formula $C_3H_6O_2$
 - an ether with the molecular formula C_2H_6O
 - an aromatic amide with the molecular formula C_8H_9NO
- Write an equation illustrating the condensation of p-diaminobenzene with the acid chloride of oxalic acid $(COCl)_2$.