These notes are posted on my site for the following reasons:

- for students to copy in their own hand-writing
  - in order to complete their class notes
  - if student did not have enough time in class
  - if student was away and missed this section
- for assistants and tutors to follow progress of the concepts taught

Photocopied/printed notes can not be used during the Unit Notebook Check in class.

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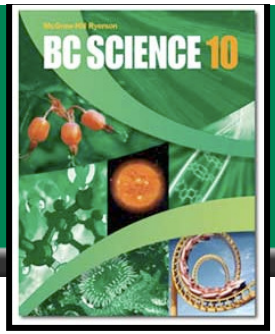
5.3 Organic Compounds



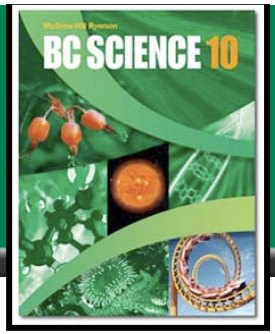
- **Organic compounds contain carbon, and usually hydrogen.**
  - "Organic" sounds like the compounds come from living things, but some do, and some don't.
  - Inorganic compounds are compounds that do not have carbon.
  - Carbon has four electrons in its valence shell, which allows for more chemical bonding possibilities than any other element.
    - Long chains of carbons form petroleum and plastics
  - Organic molecules always have C before H in their formulas
    - This differentiates organic compounds from acids, which almost always start with H

Table 5.7 Comparing Formulas of Organic Compounds and Inorganic Compounds

Organic: Must Contain Carbon		Inorganic Containing Carbon
CH_4	methane (a hydrocarbon)	$CaCO_3$, Na_2CO_3 (carbonates)
CH_3CH_2OH	ethanol (an alcohol)	Al_4C_3, SiC (carbides)
C_6H_5COOH	benzoic acid (an organic acid)	CO, CO_2 (oxides)
$K_2HC_6H_5O_7$	potassium citrate (an organic salt)	**Inorganic Not Containing Carbon**
		$FeCl_2$
$C_8H_{10}N_4O_2$	caffeine (a stimulant)	$(NH_4)_2SO_3$
$CH_3-(CH_2)_n-CH_3$	polyethylene (a plastic) where $n = 5000$ and the CH_2 unit repeats about 5000 times	PBr_3

See pages 244 - 246

Hydrocarbons and Alcohols



- **A hydrocarbon is an organic compound that contains only carbon and hydrogen.**
  - **Hydrocarbons are based on a carbon "backbone", or chain, with hydrogen atoms added on the sides.**
  - **The simplest hydrocarbon is methane (CH_4), followed by ethane (C_2H_6), propane (C_3H_8), butane (C_4H_{10}), and pentane (C_5H_{12})**
  - **All hydrocarbons are flammable, and most are liquids are room temperature**
- **Alcohols are organic compounds with C, H and O.**
  - **The simplest alcohols are methanol (CH_4O), ethanol (C_2H_6O) and isopropyl alcohol (C_3H_8O).**
  - **Alcohols are very good solvents (they dissolve other substances)**
  - **Alcohols are generally very flammable**

See pages 246 - 247

Take the Section 5.3 Quiz