Hydrocarbons Encyclopedia Article

Hydrocarbons

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Hydrocarbons

Any compound composed of elemental **carbon** and **hydrogen**, hydrocarbons may also contain **chlorine**, oxygen, **nitrogen**, and other atoms. Hydrocarbons are classified according to the arrangement of carbon atoms and the types of chemical bonds. The major classes include *aromatic* or carbon ring compounds, *alkanes* (also called aliphatic or paraffin) compounds with straight or branched chains and single bonds, and *alkenes* and *alkynes* with double and triple bonds, respectively. Most hydrocarbon fuels are a mixture of many compounds. **Gasoline**, for example, includes several hundred hydrocarbon compounds, including paraffins, olefins, and aromatic compounds, and consequently exhibits a host of possible environmental effects. All of the **fossil fuels**, including crude oils and **petroleum**, as well as many other compounds important to industries, are hydrocarbons. Hydrocarbons are environmentally important for several reasons. First, hydrocarbons give off **greenhouse gases**, especially **carbon dioxide**, when burned and are important contributers to **smog**. In addition, many aromatic hydrocarbons and hydrocarbons containing halogens are toxic or carcinogenic.