Allene Functional Group Encyclopedia Article

Allene Functional Group

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The allenes are a group of hydrocarbons with the general formula of $C_nH_{2n\ 2}$, but they differ from the alkynes in that there are two double bonds present, involving three **carbon** atoms, instead of the triple bond with two carbon atoms found in the alkynes. The **functional group** of the allenes is this twin double bond. All allenes are derivatives from 1,2 propadiene (allene) and they are isomers (compounds with the same chemical formulas but different structures and properties) of alkynes. Lower allenes are all **liquids** with a characteristic odor, and the higher members of the series are **solids**.

The allenes are not generally as stable as the alkenes which have only one double bond. Allenes can usually be converted to the appropriate alkyne by the simple addition of a base. Allenes are prepared by the removal of **bromine** and **hydrogen** bromide from 1,2,3 tribromopropane and its derivatives under the action of **potassium** hydroxide, **zinc**, and **ethanol**. The reactions which allenes partake in are typical of the alkenes, generally addition reactions involving the breaking down of the double bonds that are present.

Although allenes are far less common in nature than alkenes, a number of naturally occurring allenes have been identified and described, including pyrethrolone (an insecticide) and mycomycin (an antibiotic).