Cycloalkanes

Line Structures

Cyclopropane  ≡  Cyclobutane  Cyclopentane  Cyclohexane

Sources:  natural gas,  petroleum,  coal.

Methane with small amounts of ethane, propane, and butane.

Alkanes and cycloalkanes and some aromatic hydrocarbons

Naming:  H₃C
          H₂CCH₂

1-ethyl-3-methylcyclohexane

Alkenes  General formula C₂H₂n  bond present

(1) Naming just like alkanes, but end in ene.

(2) The bond position must be shown.

(3) bond should be given the least number possible

\[ CH₃ - \overset{\equiv}{C} - CH - CH₂ - CH₃ \]
\[ 2, 4 - \text{dimethyl -2-hexene} \]
Alkynes

General formula $\text{C}_n\text{H}_{2n-2}$; have triple bonds

1 2 3
$\text{CH} \equiv \text{C} - \text{CH} - \text{CH}_3$
CH$_2$CH$_3$

4 5
3-methyl-1-pentyne

Aromatic hydrocarbons:

Benzene

Or

$= \text{C}_6\text{H}_6$

$\text{C}_6\text{H}_5$ : phenyl group

o-dimethylbenzene
m-dimethylbenzene
p-dimethylbenzene

1,2-dimethylbenzene