

Members have similar chemical properties (they have the same functional group.)

Physical properties change gradually with increasing number of carbon atoms per molecule.

Functional group is a special group of atoms attached to an organic molecule

Successive members differ from each other by CH_2

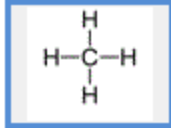
Members can be prepared by similar methods

Alkanes and the Alkane Homologous Series



General Formula

Methane (CH_4)

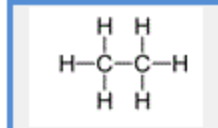


BP = -162°C

MP = -182°C

Gas at 20°C

Ethane (C_2H_6)

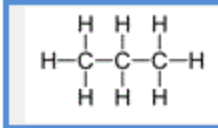


BP = -89°C

MP = -183°C

Gas at 20°C

Propane (C_3H_8)

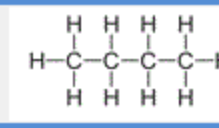


BP = -42°C

MP = -187°C

Gas at 20°C

Butane (C_4H_{10})

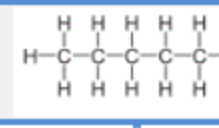


BP = -0.5°C

MP = -138°C

Gas at 20°C

Pentane (C_5H_{12})

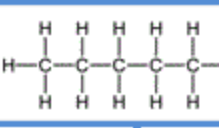


BP = 36°C

MP = -130°C

Liquid at 20°C

Hexane (C_6H_{14})

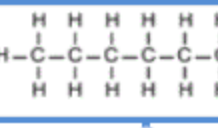


BP = 69°C

MP = -94°C

Liquid at 20°C

Heptane (C_7H_{16})

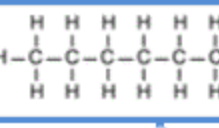


BP = 98°C

MP = -91°C

Liquid at 20°C

Octane (C_8H_{18})



BP = 126°C

MP = -57°C

Liquid at 20°C