

Trends in a Homologous series:
THE ALKANES

NUMBER OF CARBON ATOMS	NAME	Condensed Formula	Structural formula	bp (°C) (1 atm)	mp (°C)
1	Methane	CH ₄		-161.5	-182
2	Ethane	CH ₃ CH ₃		-88.6	-183
3	Propane	CH ₃ CH ₂ CH ₃		-42.1	-188
4	Butane	CH ₃ CH ₂ CH ₂ CH ₃		-0.5	-138
5	Pentane	CH ₃ CH ₂ CH ₂ CH ₂ CH ₃		36.1	-130
6	Hexane			68.7	-95
7	Heptane			98.4	-91
8	Octane			125.7	-57
9	Nonane			150.8	-54
10	Decane			174.1	-30

QUESTIONS

- Fill in the condensed formulae and the structural formulae for hexane to decane.
- Draw graphs of (a) boiling pt (y-axis) vs. number of carbons (x-axis) (b) melting pt vs. number of carbons for the first ten alkanes.
- What is a homologous series?
- Give a general formula for an alkane?