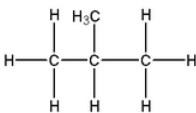
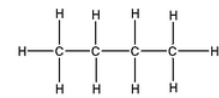
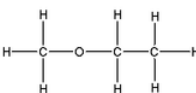
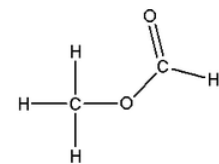
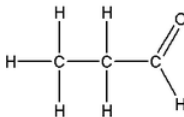
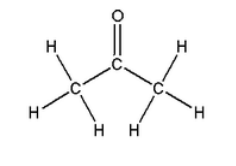
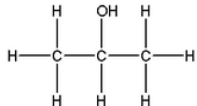
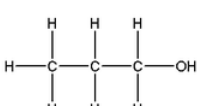
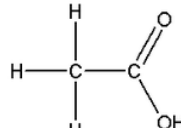
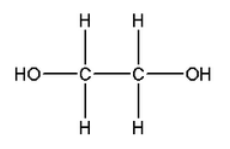


8.6.2: Boiling Points of Some Organic Compounds Whose Molecules Contain 32 or 34 Electrons

boiling points of organic compounds of similar size

Name	Projection Formula	Type of Compound	Boiling Point in degrees C
Isobutane		Branched Alkane	-10.2
n-Butane	 <p>Straight chain consisting of four "C". Three middle "C" is connected to two "H" each. Left and right "C" are connected to 3 "H" each.</p>	Normal Alkane	-0.5
Methyl ethyl ether		Ether	10.8
Methyl Formate	 <p>A "C" "H" 3 group is bonded to an "O" which is also bonded to a second "C". This "C" is double bonded to an "O" and single bonded to a "H".</p>	Ester	31.5
Propanal	 <p>A "C" "H" 3 "C" "H" 2 group is connected to another "C" which is double bonded to an "O" and single bonded to a "H".</p>	Aldehyde	48.8

Name	Projection Formula	Type of Compound	Boiling Point in degrees C
Acetone	 <p>Central "C" is double bonded to an "O". Bonded at an angle on its left and right side is two identical "C" "H" 3 groups.</p>	Ketone	56.2
2-Propanol	 <p>"O" "H" group connected to the middle "C" of three carbon straight chain alkane. Left and right "C" is connected to 3 "H" each. Middle C, in addition to "C" "H" 3 group has one bond with "H".</p>	Alcohol	82.4
1-Propanol	 <p>A "C" "H" 3 "C" "H" 2 "C" "H" 2 straight alkane chain is bonded to an "O" "H" group via its last "C".</p>	Alcohol	82.4
Acetic Acid	 <p>A "C" "H" 3 group is bonded to a "C" which is double bonded to an "O" and single bonded to an "O" "H" group.</p>	Carboxylic acid	117.9
Ethylene Glycol		Dialcohol (two OH groups)	198

This table shows the boiling points of organic compounds of similar size. This, then, provides a good means of comparing intermolecular forces of different structure types. In general, decreasing branching, increasing polarity, and increasing hydrogen bonding opportunities increases the boiling point. This makes sense, as all three of these contribute to increase intermolecular forces.

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