

C-H

Alkane	2850 - 2960
Alkene	3010 - 3100
Alkyne	3300
Aromatic ring	3000 - 3050
Aldehyde	2720

C-C

Alkane	800 - 1300						
Alkene	1620 - 1680						
Alkyne	2100 - 2260						
Aromatic	1450 - 1600						
<u>Stretching</u>	<table><tr><td>1500</td><td rowspan="3">bending - <u>monosubstituted</u> - 700-750</td></tr><tr><td>1600</td><td>Disubstituted - o - 750</td></tr><tr><td>1450</td><td>m - 700 p - 800</td></tr></table>	1500	bending - <u>monosubstituted</u> - 700-750	1600	Disubstituted - o - 750	1450	m - 700 p - 800
1500	bending - <u>monosubstituted</u> - 700-750						
1600		Disubstituted - o - 750					
1450		m - 700 p - 800					

O-H

- Monomeric alcohol & phenol - 3600 - 3650
- Hydrogen bonded alcohol & phenol (intermolecular) - 3200 - 3400 C-O-H
- intramolecular - 3450 - 3550
- Acid - 2500 - 3000

C-O

1° alcohol	1050
2° alcohol	1100
3° alcohol	1150

C=O

✓ Acid Aromatic - 1680 - 1700

Aliphatic - 1700 - 1725

✓ Ketone - 1700 - 1725

Aldehyde Aromatic - 1690 - 1710

Aliphatic - 1720 - 1740

✓ Acid derivative

ester - 1740

Anhydride - 1740 - 1840

Amide - 1650 - 1680
1660

Amine - N-H - 3200 - 3500
(1° & 2°)

- C-N Aliphatic - 1030 - 1230

Aromatic - 1180 - 1360

Nitro - 1350 - 1550

C=N Nitrile - 2200 - 2280