Tabela 1 - Typical Infrared Absorption Frequencies

	Stretching Vibrations			Bending Vibrations		
Functional Class	**Range (cm^{-1})**	**Intensity**	**Assignment**	**Range (cm^{-1})**	**Intensity**	**Assignment**
Alkanes	2850-3000	str	CH_3, CH_2 & CH 2 or 3 bands	1350-1470 1370-1390 720-725	med med wk	CH_2 & CH_3 deformation CH_3 deformation CH_2 rocking
Alkenes	3020-3100 1630-1680 1900-2000	med var str	=C-H & $=CH_2$ (usually sharp) C=C (symmetry reduces intensity) C=C asymmetric stretch	880-995 780-850 675-730	str med med	=C-H & $=CH_2$ (out-of-plane bending) cis-RCH=CHR
Alkynes	3300 2100-2250	str var	C-H (usually sharp) C≡C (symmetry reduces intensity)	600-700	str	C-H deformation
Arenes	3030 1600 & 1500	var med-wk	C-H (may be several bands) C=C (in ring) (2 bands) (3 if conjugated)	690-900	str-med	C-H bending & ring puckering
Alcohols & Phenols	3580-3650 3200-3550 970-1250	var str str	O-H (free), usually sharp O-H (H-bonded), usually broad C-O	1330-1430 650-770	med var-wk	O-H bending (in-plane) O-H bend (out-of-plane)
Amines	3400-3500 (dil. soln.) 3300-3400 (dil. soln.) 1000-1250	wk wk med	N-H (1°-amines), 2 bands N-H (2°-amines) C-N	1550-1650 660-900	med-str var	NH_2 scissoring (1°-amines) NH_2 & N-H wagging (shifts on H-bonding)

	Stretching Vibrations			Bending Vibrations		
Aldehydes & Ketones	2690-2840(2 bands)	med	C-H (aldehyde C-H)			
	1720-1740	str	C=O (saturated aldehyde)	1350-1360	str	α-CH_3 bending
	1710-1720	str	C=O (saturated ketone)	1400-1450	str	α-CH_2 bending
				1100	med	C-C-C bending
	1690	str	aryl ketone			
	1675	str	α,β-unsaturation			
	1745	str	cyclopentanone			
	1780	str	cyclobutanone			
Carboxylic Acids & Derivatives	2500-3300 (acids) overlap	str	O-H (very broad)	1395-1440	med	C-O-H bending
	C-H	str	C=O (H-bonded)			
	1705-1720 (acids)	med-str	O-C (sometimes 2-peaks)			
	1210-1320 (acids)					
	1785-1815 (acyl halides)	str	C=O			
	1750 & 1820 (anhydrides)	str	C=O (2-bands)			
	1040-1100	str	O-C			
	1735-1750 (esters)	str	C=O			
	1000-1300	str	O-C (2-bands)	1590-1650	med	N-H (1°-amide) II band
	1630-1695(amides)	str	C=O (amide I band)	1500-1560	med	N-H (2°-amide) II band
Nitriles Isocyanates,Isothiocyanates, Diimides, Azides & Ketenes	2240-2260	med	C≡N (sharp)			
	2100-2270	med	-N=C=O, -N=C=S -N=C=N-, $-N_3$, C=C=O			