

CHARACTERISTIC PROTON CHEMICAL SHIFTS

Note : All values are relative to TMS, $\delta = 0.0$ ppm

<i>Type of Proton</i>	<i>Structure</i>	<i>Chemical Shift - δ ppm</i>
Cyclopropane	C_3H_6	0.2
Primary	$R-CH_3$	0.9
Secondary	R_2-CH_2	1.3
Tertiary	R_3-C-H	1.5
Vinyl	$C=C-H$	4.6-5.9
Acetylenic triple bond	$CC-H$	2-3
Ketone	$RCOCH_3$	2.1-2.6
Aromatic	$Ar-H$	6-8.5
Benzylic	$Ar-C-H$	2.2-3
Allylic	$C=C-CH_3$	1.7
Fluorides	$H-C-F$	4-4.5
Chlorides	$H-C-Cl$	3-4
Bromides	$H-C-Br$	2.5-4
Iodides	$H-C-I$	2-4
Alcohols	$H-C-OH$	3.4-4
Ethers	$H-C-OR$	3.3-4
Esters	$RCOO-C-H$	3.7-4.1
Esters	$H-C-COOR$	2-2.2
Acids	$H-C-COOH$	2-2.6
Carbonyl Compounds	$H-C-C=O$	2-2.7
Aldehydic	$R-(H-)C=O$	9-10
Hydroxylic	$R-C-OH$	1-5.5
Phenolic	$Ar-OH$	4-12
Enolic	$C=C-OH$	15-17
Carboxylic	$RCOOH$	10.5-12
Amino	RNH_2	1-5