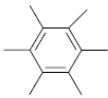



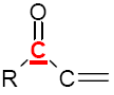



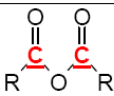


Desvios Químicos Característicos de $^1\text{H}$		
Type of Proton	Structure	Chemical Shift, ppm
Ciclopropano	$\text{C}_3\text{H}_6$	0.2
Primário	$\text{R}-\text{CH}_3$	0.9
Secundário	$\text{R}_2-\text{CH}_2$	1.3
Terciário	$\text{R}_3-\text{C}-\text{H}$	1.5
Vinílico	$\text{C}=\text{C}-\text{H}$	4.6-5.9
Acetilénico	triple bond, $\text{CC}-\text{H}$	2-3
Aromático	$\text{Ar}-\text{H}$	6-8.5
Benzílico	$\text{Ar}-\text{C}-\text{H}$	2.2-3
Alílico	$\text{C}=\text{C}-\text{CH}_3$	1.7
Fluoretoss	$\text{H}-\text{C}-\text{F}$	4-4.5
Cloretos	$\text{H}-\text{C}-\text{Cl}$	3-4
Brometos	$\text{H}-\text{C}-\text{Br}$	2.5-4
Iodetos	$\text{H}-\text{C}-\text{I}$	2-4
Álcoois	$\text{H}-\text{C}-\text{OH}$	3.4-4
Éteres	$\text{H}-\text{C}-\text{OR}$	3.3-4
Ésteres	$\text{RCOO}-\text{C}-\text{H}$	3.7-4.1
Ésteres	$\text{H}-\text{C}-\text{COOR}$	2-2.2
Ácidos	$\text{H}-\text{C}-\text{COOH}$	2-2.6
Compostos Carbonílicos	$\text{H}-\text{C}-\text{C}=\text{O}$	2-2.7
Aldeídos	$\text{R}-\text{(H)-C}=\text{O}$	9-10
Hidroxílico	$\text{R}-\text{C}-\text{OH}$	1-5.5
Fenólico	$\text{Ar}-\text{OH}$	4-12
Enólico	$\text{C}=\text{C}-\text{OH}$	15-17
Carboxílico	$\text{RCOOH}$	10.5-12
Amino	$\text{RNH}_2$	1-5

## Desvios Químicos Característicos de $^{13}\text{C}$

Tipo de composto	Tipo de carbono	Desvio Químico (ppm)
ALCANOS ( $\text{sp}^3$ )	$\text{R}-\underline{\text{C}}\text{H}_3$	8-30
	$\text{R}_2-\underline{\text{C}}\text{H}_2-$	15-55
	$\text{R}_3-\underline{\text{C}}\text{H}-$	20-65
ALCENOS ( $\text{sp}^2$ )	$\text{C}=\underline{\text{C}}$	100-150
ALCINOS ( $\text{sp}$ )	$\text{C}\equiv\underline{\text{C}}$	65-90
AROMÁTICOS		110-175
ÁLCOOIS	$\underline{\text{C}}-\text{OH}$	40-80
ÉTERES	$\text{C}-\text{O}-\underline{\text{C}}$	40-80
AMINAS	$\underline{\text{C}}-\text{NH}_2$	30-65
AMIDAS		160-180
NITRILOS	$\underline{\text{C}}\equiv\text{N}$	110-135
ALDEÍDOS		190-210
CETONAS		200-220
$\alpha,\beta$ -INSATURADAS		190-210
ÉSTERS		160-170
ÁCIDOS CARBOXÍLICOS		160-185
CLORETOS DE ÁCIDO		160-180
ANIDRIDOS		150-180
HALETOS	$\underline{\text{C}}-\text{I}$	0-40
	$\underline{\text{C}}-\text{Br}$	25-65