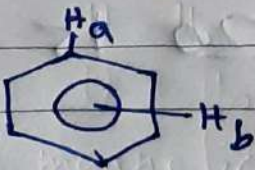


Some important ~~data~~ informations :-

Structure	Jab Hz
$\begin{array}{c} \diagup \text{C} \diagdown \\ \text{H}_a \quad \text{H}_b \end{array}$	10-18, Depending on the electronegativities of the attached groups
$\begin{array}{c} \diagup \text{CH}_a - \text{CH}_b \diagdown \\ \text{(Vic.)} \end{array}$	Depends on dihedral angle. In freely rotating carbon chains (alkyl groups) it is around 8 Hz.
$\begin{array}{c} \diagdown \text{C} = \text{C} \diagup \\ \text{H}_a \quad \text{H}_b \end{array}$	0.3-2, In simple alkenes
$\begin{array}{c} \text{H}_a \quad \text{H}_b \\ \diagdown \quad \diagup \\ \text{C} = \text{C} \\ \diagup \quad \diagdown \\ \text{(cis)} \end{array}$	5-14
$\begin{array}{c} \text{H}_a \quad \text{H}_b \\ \diagdown \quad \diagup \\ \text{C} = \text{C} \\ \diagup \quad \diagdown \end{array}$	11-19, Trans coupling in alkene groups is stronger than cis coupling
$\begin{array}{c} \text{C} = \text{C} - \text{C} - \text{C} \\ \diagdown \quad \diagup \quad \diagdown \quad \diagup \\ \text{H}_b \quad \text{H}_a \end{array}$	4-10
$\begin{array}{c} \text{H}_a - \text{C} = \text{C} - \text{C} - \text{H}_b \\ \quad \quad \quad \end{array}$	(cis or trans) 0-2, allylic coupling
$\begin{array}{c} \text{C} = \text{C} - \text{C} = \text{C} \\ \quad \\ \text{H}_a \quad \text{H}_b \end{array}$	10-13
	ortho, 7-10 meta, 2-3 para, 0-1

Signal in NMR Spectrometer :-

Page _____

	No. of adjacent H _b	Number of lines
$\begin{array}{c} \text{H}_a \\ \\ -\text{C}-\text{C}- \\ \quad \end{array}$	0	1
$\begin{array}{c} \text{H}_a \quad \text{H}_b \\ \quad \\ -\text{C}-\text{C}- \\ \quad \end{array}$	1	2
$\begin{array}{c} \text{H}_a \quad \text{H}_b \\ \quad \\ -\text{C}-\text{C}-\text{H}_b \\ \quad \end{array}$	2	3
$\begin{array}{c} \text{H}_a \quad \text{H}_b \\ \quad \\ -\text{C}-\text{C}-\text{H}_b \\ \quad \\ \text{H}_b \end{array}$	3	4
$\begin{array}{c} \text{H}_b \quad \text{H}_a \quad \text{H}_b \\ \quad \quad \\ \text{H}_b-\text{C}-\text{C}-\text{C}-\text{H}_b \\ \quad \quad \\ \text{H}_b \quad \text{H}_b \end{array}$	6	7

Pascal's Triangle

Singlet

Doublet

Triplet

Quartet

Quintet

Sextet

Septet

1 6 15 20 15 6 1