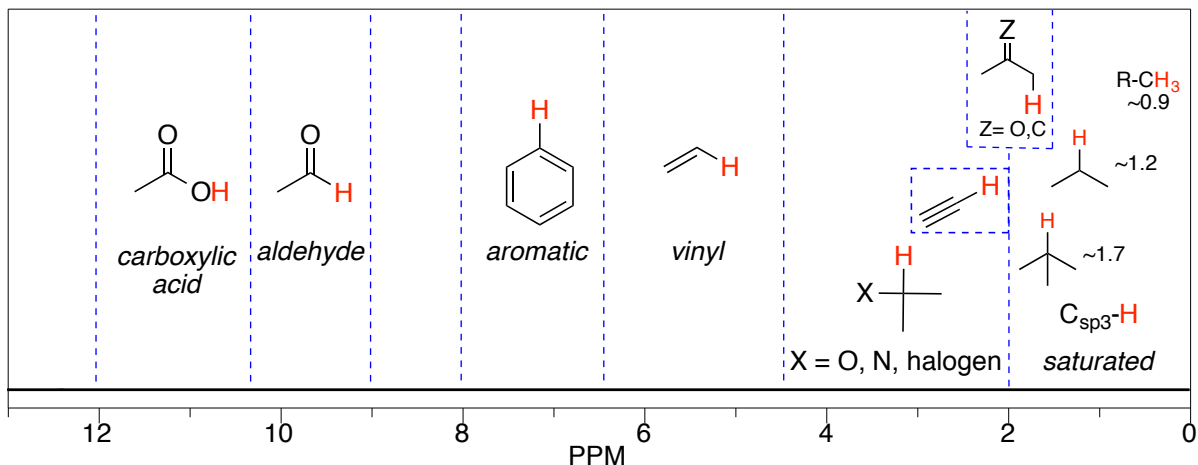


Proton NMR Chemical Shift Regions



Representative Values for the Saturated Region

Methyl	Methylene	Methine
$\begin{array}{c} \text{H} \\ \\ -\text{C}-\text{H} \\ \\ \text{H} \end{array}$	$\begin{array}{c} \text{H} \\ \\ -\text{C}- \\ \\ \text{H} \end{array}$	$\begin{array}{c} \\ \\ -\text{C}-\text{H} \\ \\ \end{array}$
~0.9 ppm	~1.2 ppm	~1.7 ppm

Representative Values - Neighboring Electronegative Atom

$\begin{array}{c} \text{H} \\ \\ -\text{O}-\text{C}-\text{H} \\ \\ \text{H} \end{array}$	$\begin{array}{c} \text{H} \\ \\ \text{Cl}-\text{C}-\text{H} \\ \\ \text{H} \end{array}$	$\begin{array}{c} \text{H} \\ \\ \text{Br}-\text{C}-\text{H} \\ \\ \text{H} \end{array}$	$\begin{array}{c} \text{H} \\ \\ \text{I}-\text{C}-\text{H} \\ \\ \text{H} \end{array}$	$\begin{array}{c} \text{H} \\ \\ \text{H}_2\text{N}-\text{C}-\text{H} \\ \\ \text{H} \end{array}$
~3.4 ppm	3.1 ppm	2.7 ppm	2.2 ppm	2.4 ppm

Carbon-13 NMR Chemical Shift Regions

