NMR Practice for CHM235
Assign all peaks and draw a reasonable structure for this set of spectra
Formula = $C_6H_{10}O_2$

1HNMR

13C NMR

IR
Assign all peaks and draw a reasonable structure for this set of spectra

Formula = C₆H₁₂O₂

1H NMR

13C NMR

IR
Equivalence: How many peaks would you expect from these structures in the 13C NMR?

You have two unlabeled vials containing a different dibromopropane isomer. In order to correctly identify each compound and properly label its container you have taken their $^{13}$C nmr and $^1$H nmr spectra. Match the spectral data given below. The compounds come from the set below:

1,1-dibromopropane  2,2-dibromopropane
1,2-dibromopropane  1,3-dibromopropane

Vial A:
$^{13}$C NMR: Three signals between $\delta$ 0 and 60 ppm
$^1$H NMR: Three signals between $\delta$ 0 and 5 ppm (the lowest field signal is a sextet)

\[
\begin{align*}
\text{CH}_3 & \quad \text{Br} \\
\text{Br} & \\
\end{align*}
\]

2 peaks for HC-EN, the most leftmost has 5 neighbors.

Vial B
$^{13}$C NMR: Two signals between $\delta$ 0 and 70 ppm
$^1$H NMR: One signal, a singlet at $\delta$ 1.2 ppm

\[
\begin{align*}
\text{CH}_3 & \quad \text{Br} \\
\text{H}_3\text{C} & \\
\text{Br} & \\
\end{align*}
\]

no peak at HC-EN